

**CITY OF NEWTON  
PURCHASING DEPARTMENT**

***CONTRACT FOR PUBLIC WORKS DEPARTMENT  
(M.G.L. Ch. 30, Sec. 39m)***

***PROJECT MANUAL:*  
RECONSTRUCTION OF WOODLAND ROAD  
A SCENIC ROADWAY  
(From Washington St. to Central St.)  
*INVITATION FOR BID # 11-72***

**Bid Opening Date: March 31, 2011 at 11:30 a.m.**

**MARCH 2011  
Setti D. Warren, Mayor**

CITY OF NEWTON, MASSACHUSETTS

PURCHASING DEPARTMENT

[purchasing@newtonma.gov](mailto:purchasing@newtonma.gov)

Fax (617) 796-1227

**March 25, 2011**

ADDENDUM #1

INVITATION FOR BID #11-72

**WOODLAND ROAD RECONSTRUCTION**

THIS ADDENDUM IS TO: **Provide supplemental information:**

The attached (5 page) PDF file highlights four separate (4) borings conducted at various locations along the proposed sewer line in the proximity of Studio Road. This sampling was done for the express purpose of determining the depth of refusal at these randomly selected locations and is being provided as a courtesy to prospective bidders who are ultimately responsible for performing their own analytical process.

All other terms and conditions of this bid remain unchanged.

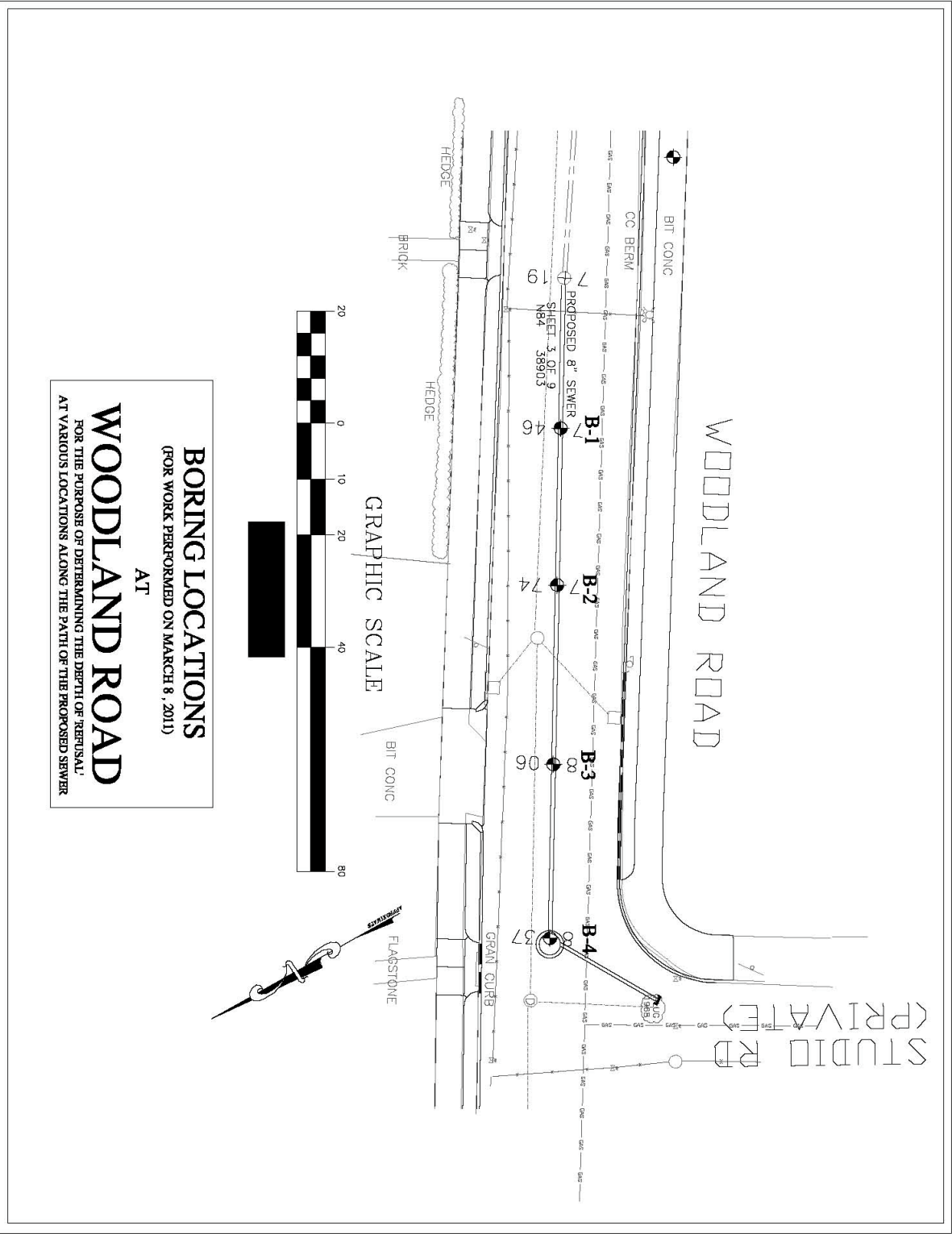
**PLEASE ENSURE THAT YOU ACKNOWLEDGE THIS ADDENDUM ON YOUR BID FORM.**

Thank you.



Rositha Durham

*Chief Procurement Officer*



<b>Geologic - Earth Exploration, Inc.</b>  7 Sherwood Drive TEL (508) 384-4434				Norfolk, MA 02056 FAX (508) 384-4452				CLIENT: <u>City of Newton</u>		BORING #: <b>B-1</b>
								PROJECT: <u>Woodland Road</u>		
LOCATION: <u>Newton, MA</u>								PAGE 1 OF 1		

File #:	<u>11029</u>	CASING	<u>HSA</u>	SAMPLER	<u>SS</u>	CORE BARREL	Surface Elevation: _____
Date Started:	<u>3/8/11</u>	TYPE	<u>HSA</u>		<u>SS</u>		Station: _____
Date Completed:	<u>3/8/11</u>	SIZE	<u>3 1/4"</u>		<u>1 3/8"</u>		Groundwater level readings
Driller:	<u>J. Galvin</u>	HAMMER			<u>140#</u>	<u>---</u>	Date <u>3/8/11</u> Depth <u>N/A</u>
Site Rep.:		FALL			<u>30"</u>	<u>---</u>	Date _____ Depth _____

Depth ft	Sample					Strata Change ft	Sample Description
	No.	Depth ft	Pen. in	Rec. in	Blows/6"		
		0.0					3" of ASPHALT
2							
4	S-1	3.5-3.5	0	0	120/0	3.5	S-1 Bottom of exploration at 3.5'  Auger Refusal at 3.5 feet
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

Ground Surface to _____ used _____ then _____	
Proportions Used	Cohesive Consistency Blows/ft
Trace	0 to 10%      0-2 Very Soft      9-15 Stiff
Little	10 to 20%      3-4 Soft      16-30 V-Stiff
Some	20 to 35%      5-8 M-Stiff      31+ Hard
And	35 to 50%
Cohesionless Density Blows/ft	Sample Type
0-10 Loose	UP = Fixed Piston
10-30 M-Dense	UT = Shelby Tube
30-50 Dense	OE = Open End Rod
50+ V-Dense	* = 300# hammer

**Notes:**

- The stratification lines represent the approximate boundary between soil types. The transition may be gradual.
- Water level readings were made in the drill hole during or at the completion of drilling. The water level may fluctuate over time.

**Remarks:** NOTE: All soil descriptions are made in the field by the Drilling Foreman. No laboratory analysis were performed for this purpose.

BL ALL 11029 CITY OF NEWTON GEL GEOLOGIC.GDT 3/16/11

<b>Geologic - Earth Exploration, Inc.</b>  7 Sherwood Drive TEL (508) 384-4434				Norfolk, MA 02056 FAX (508) 384-4452				CLIENT: <u>City of Newton</u>		BORING #: <b>B-2</b>
								PROJECT: <u>Woodland Road</u>		
								LOCATION: <u>Newton, MA</u>		PAGE 1 OF 1
File #: <u>11029</u>		CASING TYPE <u>HSA</u>		SAMPLER <u>SS</u>		CORE BARREL <u>---</u>		Surface Elevation: _____		
Date Started: <u>3/8/11</u>		SIZE <u>3 1/4"</u>		<u>1 3/8"</u>		<u>---</u>		Station: _____		
Date Completed: <u>3/8/11</u>		HAMMER <u>---</u>		<u>140#</u>		<u>---</u>		Groundwater level readings		
Driller: <u>J. Galvin</u>		FALL <u>---</u>		<u>30"</u>		<u>---</u>		Date <u>3/8/11</u>	Depth <u>N/A</u>	
Site Rep.: _____		FALL <u>---</u>		<u>30"</u>		<u>---</u>		Date _____	Depth _____	

Depth ft	Sample					Strata Change ft	Sample Description
	No.	Depth ft	Pen. in	Rec. in	Blows/6"		
		0.0					3" of ASPHALT
2							
4							
6							
8						8.5	
10							Bottom of exploration at 8.5'
12							Auger Refusal at 8.5 feet
14							
16							
18							
20							
22							
24							

Ground Surface to _____ used _____ then _____									
Proportions Used		Cohesive Consistency Blows/ft				Cohesionless Density Blows/ft		Sample Type	
Trace	0 to 10%	0-2	Very Soft	9-15	Stiff	0-10	Loose	UP = Fixed Piston	
Little	10 to 20%	3-4	Soft	16-30	V-Stiff	10-30	M-Dense	UT = Shelby Tube	
Some	20 to 35%	5-8	M-Stiff	31+	Hard	30-50	Dense	OE = Open End Rod	
And	35 to 50%					50+	V-Dense	* = 300# hammer	

<b>Notes:</b>	1. The stratification lines represent the approximate boundary between soil types. The transition may be gradual. 2. Water level readings were made in the drill hole during or at the completion of drilling. The water level may fluctuate over time.
<b>Remarks:</b>	NOTE: All soil descriptions are made in the field by the Drilling Foreman. No laboratory analysis were performed for this purpose.

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<b>Geologic - Earth Exploration, Inc.</b>  7 Sherwood Drive TEL (508) 384-4434				Norfolk, MA 02056 FAX (508) 384-4452				CLIENT: <u>City of Newton</u>				BORING #: <b>B-3</b>	
								PROJECT: <u>Woodland Road</u>				PAGE 1 OF 1	
LOCATION: <u>Newton, MA</u>													

File #:	<u>11029</u>	CASING	<u>HSA</u>	SAMPLER	<u>SS</u>	CORE BARREL	Surface Elevation:		
Date Started:	<u>3/8/11</u>	TYPE	<u>HSA</u>		<u>SS</u>		Station:		
Date Completed:	<u>3/8/11</u>	SIZE	<u>3 1/4"</u>		<u>1 3/8"</u>		Groundwater level readings		
Driller:	<u>J. Galvin</u>	HAMMER			<u>140#</u>	<u>---</u>	Date <u>3/8/11</u>	Depth <u>N/A</u>	
Site Rep.:		FALL			<u>30"</u>	<u>---</u>	Date	Depth	

Depth ft	Sample					Strata Change ft	Sample Description
	No.	Depth ft	Pen. in	Rec. in	Blows/6"		
		0.0					3" of ASPHALT
2							
4							
6							
8						8.4	
10							Bottom of exploration at 8.4'
12							Auger Refusal at 8.4 feet
14							
16							
18							
20							
22							
24							

Ground Surface to _____ used _____ then _____									
Proportions Used		Cohesive Consistency Blows/ft				Cohesionless Density Blows/ft		Sample Type	
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<b>Geologic - Earth Exploration, Inc.</b>  7 Sherwood Drive TEL (508) 384-4434				Norfolk, MA 02056 FAX (508) 384-4452				CLIENT: <u>City of Newton</u>				BORING #: <b>B-4</b>	
								PROJECT: <u>Woodland Road</u>				PAGE 1 OF 1	
LOCATION: <u>Newton, MA</u>													

File #:	<u>11029</u>	CASING	<u>HSA</u>	SAMPLER	<u>SS</u>	CORE BARREL	Surface Elevation:		
Date Started:	<u>3/8/11</u>	TYPE	<u>HSA</u>		<u>SS</u>		Station:		
Date Completed:	<u>3/8/11</u>	SIZE	<u>3 1/4"</u>		<u>1 3/8"</u>		Groundwater level readings		
Driller:	<u>J. Galvin</u>	HAMMER			<u>140#</u>	<u>---</u>	Date <u>3/8/11</u>	Depth <u>N/A</u>	
Site Rep.:		FALL			<u>30"</u>	<u>---</u>	Date	Depth	

Depth ft	Sample					Strata Change ft	Sample Description
	No.	Depth ft	Pen. in	Rec. in	Blows/6"		
		0.0					3" of ASPHALT
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6							
8						7.8	Bottom of exploration at 7.8'
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12							
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18							
20							
22							
24							

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Proportions Used		Cohesive Consistency Blows/ft				Cohesionless Density Blows/ft		Sample Type	
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**CITY OF NEWTON  
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A SCENIC ROADWAY  
(From Washington St. to Central St.)**

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**CITY OF NEWTON  
PURCHASING DEPARTMENT  
INVITATION FOR BID #11-72**

The City of Newton invites sealed bids from Contractors for the:

**RECONSTRUCTION OF WOODLAND ROAD  
A SCENIC ROADWAY  
(From Washington St. to Central St.)**

**Bids will be received until: 11:30 a.m., March 31, 2011**

at the Purchasing Department, Room 204, Newton City Hall, 1000 Commonwealth Ave., Newton, MA 02459. Immediately following the deadline for bids all bids received within the time specified will be publicly opened and read aloud.

**The work under this contract is for the reconstruction of approximately two-thousand four hundred (2,400) linear feet of variable (33'-40') width roadway, and for the installation of granite curbing and/or sidewalks at various locations along the remaining one-thousand four hundred (1,400) linear foot portion of the roadway.**

**The one-thousand four hundred (1,400) linear foot portion of this work shall be performed in conjunction with a separately issued cold-planing contract, therefore the scheduling of this portion of the work will be at the discretion of the Engineer. Thus the successful bidder must be ready, willing, able, and ultimately required to accommodate the City of Newton in the scheduling of this work.**

Contract Documents will be available online at [www.ci.newton.ma.us/bids](http://www.ci.newton.ma.us/bids) or for pick up at the Purchasing Department after **10:00 a.m., March 17, 2011. Bids must be submitted with one Original and one Copy.**

**MassDOT has provided a list of Prequalified Construction Contractors to the City of Newton. Bidders will be verified at time of Bid Opening.**

**\*A bid deposit in an amount that is not less than five percent (5%) of the value of the bid, including all add alternates, is required.** Bid deposits, payable to the City of Newton, shall be either in the form of a bid bond, or cash, or a certified check on, or a treasurer's or cashier's check issued by, a responsible bank or trust company. The City of Newton will award the contract to the lowest eligible and responsible bidder. Please Note: this bid, in accordance with the Chapter 303 Acts of 2008, contains Price Adjustments and new Prevailing Wage requirements. All bidders are required to familiarize themselves with these terms and conditions before submitting a bid.

**Anticipated start date is May 16, 2011. Time for completion is one-hundred sixty (160) calendar days from the Notice To Proceed.**

All bids are subject to the provisions of M.G.L. Chapter 30, Section 39M. **Wages are subject** to minimum wage rates determined by the Massachusetts Department of Labor and Industries pursuant to M.G.L. Chapter 149, Sec. 26 to 27H. The schedule of wage rates applicable to this contract is included in the bidding documents. In addition, the prevailing wage schedule will be updated annually for all public construction projects lasting longer than one (1) year. You will be required to pay the rates set out in any updated prevailing wage schedule. Increases in prevailing wage schedules will not be the basis for change order requests. The successful bidder will be required to provide a Certificate of Insurance demonstrating current coverage of the type and amounts set forth in the Project Manual. The successful bidder will be required to furnish a **Labor and Materials Payment Bond in the amount of 50%** of the contract total. Wages are paid to drivers for all “on-site” work.

Once you've downloaded this bid from the internet website ([www.ci.newton.ma.us/bids](http://www.ci.newton.ma.us/bids)) I strongly suggest you email ([purchasing@newtonma.gov](mailto:purchasing@newtonma.gov)) your company's Name, address, EMAIL, phone, fax AND the INVITATION FOR BID NUMBER and Project Title, so that we may add you to the Bidders List and you will be notified of any/all addendums.

The City of Newton will reject any and all bids when required to do so by the above referenced General Laws. In addition, the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids (in whole or in part) if it be in the public interest to do so.

CITY OF NEWTON  
Rositha Durham  
Chief Procurement Officer  
March 17, 2011

**\*PLEASE NOTE: Bid Surety has changed from what was originally advertised.**

**CITY OF NEWTON  
DEPARTMENT OF PURCHASING  
INSTRUCTIONS TO BIDDERS**

**ARTICLE 1 - BIDDER'S REPRESENTATION**

- 1.1 Each General Bidder (hereinafter called the "Bidder") by making a bid (hereinafter called "bid") represents that:
1. The Bidder has read and understands the Contract Documents and the bid is made in accordance therewith.
  2. The Bidder has visited the site and is familiar with the local conditions under which the Work has to be performed.
- 1.2 Failure to so examine the Contract Documents and site will not relieve any Bidder from any obligation under the bid as submitted.

**ARTICLE 2 - REQUEST FOR INTERPRETATION**

- 2.1 Bidders shall promptly notify the City of any ambiguity, inconsistency, or error which they may discover upon examination of the Contract Documents, the site, and local conditions.
- 2.2 Bidders requiring clarification or interpretation of the Contract Documents shall make a written request to the *Chief Procurement Officer*, at [purchasing@newtonma.gov](mailto:purchasing@newtonma.gov) or via facsimile (617) 796-1227. The City will answer such requests if received Thursday, **March 24, 2011** at 12:00 noon.
- 2.3 Interpretation, correction, or change in the Contract Documents will be made by Addendum which will become part of the Contract Documents. The City will not be held accountable for any oral instruction.
- 2.4 Addenda will be emailed to every individual or firm on record as having taken a set of Contract Documents.
- 2.5 Copies of addenda will be made available for inspection at the location listed in the Invitation for Bids where Contract Documents are on file, in addition to being available online at [www.ci.newton.ma.us/bids](http://www.ci.newton.ma.us/bids).
- 2.6 Bidders downloading information off the internet web site are solely responsible for obtaining any addenda prior to the bid opening. If the bidder makes themselves known to the Purchasing Dept., at [purchasing@newtonma.gov](mailto:purchasing@newtonma.gov) or via facsimile (617) 796-1227, they shall be placed on the bidder's list. Bidders must provide the Purchasing Dept. with their company's name, street address, city, state, zip, phone, fax, email address and **INVITATION FOR BID NUMBER #11-72**.

**ARTICLE 3 - MBE PARTICIPATION**

- 3.1 Notice is hereby given that the Mayor's Affirmative Action Plan for the City of Newton, dated December 1999 is applicable to all construction contracts in excess of \$10,000.00. A copy of this plan is on file at City of Newton Purchasing Department.
- 3.2 Notice is hereby given that the City of Newton Minority/Women Business Enterprise Plan dated December 1999 and the Supplemental Equal Employment Opportunity Anti-Discrimination and Affirmative Action Program is applicable to all City contracts for goods and services in excess of \$50,000.00. Copies of these plans are incorporated in the bidding documents.

**ARTICLE 4 - PREPARATION AND SUBMISSION OF BIDS**

- 4.1 Bids shall be submitted on the "Bid Form" as appropriate, furnished by the City.
- 4.2 All entries on the Bid Form shall be made by typewriter or in ink.
- 4.3 Where so indicated on the Bid Form, sums shall be expressed in both words and figures. Where there is a discrepancy between the bid sum expressed in words and the bid sum expressed in figures, the words shall control.

- 4.4 Bid Deposits shall be submitted in the amount specified in the Invitation for Bids. They shall be made payable to the City of Newton and shall be either in the form of cash, certified check, treasurer's or cashier's check issued by a responsible bank or trust company, or a bid bond issued by a surety licensed to do business in the Commonwealth of Massachusetts; and shall be conditioned upon the faithful performance by the principal of the agreements contained in the bid.

Bid deposits of the three (3) lowest responsible and eligible Bidders shall be retained until the execution and delivery of the Owner/Contractor agreement.

- 4.5 The Bid, including the bid deposit shall be enclosed in a sealed envelope with the following plainly marked on the outside:

- \* GENERAL BID FOR:
- \* NAME OF PROJECT AND **INVITATION NUMBER**
- \* BIDDER'S NAME, BUSINESS ADDRESS, AND PHONE NUMBER

- 4.6 Date and time for receipt of bids is set forth in the Invitation for Bids.

- 4.7 Timely delivery of a bid at the location designated shall be the full responsibility of the Bidder.

- 4.8 Bids shall be submitted with one original and one copy. Be advised that a new Massachusetts law has been enacted that required all employees who work on Massachusetts public works construction sites must have no less than 10 hours of OSHA-approved safety and health training. See Chapter 306 of the Acts of 2004, which will become effective July 1, 2006.

1. This requirement will apply to any general bid or sub bid submitted on or after July 1, 2006 and to any contract awarded on or after July 1, 2006.
2. This law directs the Massachusetts Attorney General to restrain the award of construction contracts to any contractor who is in violation to this requirement and to restrain the performance of these contracts by non-complying contractors.
3. The contractor and all subcontractors on this project will be required to provide certification of compliance with this requirement. Non-compliance with this new Massachusetts Law will disqualify you from bidding on public contracts.

#### 4.9 PRICE ADJUSTMENT CLAUSES CHAPTER 90 FUNDS

It is the intention of the City to include price adjustments in the award of this Contract. These price adjustments shall be for 1) Fuel 2) Liquid Asphalt and/or for 3) Portland Cement when such commodities have been determined to be integral components of the work.

For those commodities designated to be paid as a 'differential' items then the special provision shall provide for a price adjustment formula for the affected items. This adjustment shall be based on the difference between the **Base Price** and the **Period Price** which shall be evaluated on a **monthly** basis, but price adjustments shall only be made if the monthly cost change exceeds **+/- 5 per cent**. Subsequently each respective price adjustment shall be made as specified under each applicable and separate payment item.

IMPORTANT NOTE: Depending on the prevailing market trends at the time of payment these price adjustments may provide for additional compensation to the Contractor, or they may otherwise result in a repayment to the City. The increase or a decrease in the value of the commodity, during the applicable payment period in which the goods and/or services were rendered, shall be the determinant factor.

The City will refer to the Massachusetts Highway Department price adjustment tables as included in this bid package to establish the base price and will be used for the actual period price.

#### **Price Adjustment Clauses – to apply as follows:**

- **Diesel and Gasoline** – The Base Price, and the Period Price of fuel, shall be the derived average cost of Diesel Fuel and Gasoline Fuel combined for each applicable payment period. Fuel adjustments shall apply to all work in the contract. The Contractor, at their own election, may either choose to bid their fuel costs separately, or he may otherwise elect to incorporate their fuel costs into separate payment items. In any event the Contractor's final bid prices shall include the fuel costs for all goods & services rendered under this contract.

No price adjustment will be allowed beyond the completion date of the contract unless there is an approved extension of time by the City.

## ARTICLE 5 - ALTERNATES

- 5.1 Each Bidder shall acknowledge Alternates (if any) in Section C on the Bid Form.
- 5.2 In the event an Alternate does not involve a change in the amount of the base bid, the Bidder shall so indicated by writing "No Change", or "N/C" or "0" in the space provided for that Alternate.
- 5.3 Bidders shall enter on the Bid Form a single amount for each Alternate which shall consist of the amount for work performed by the Contractor.
- 5.4 The low Bidder will be determined on the basis of the sum of the base bid and the accepted alternates.

## ARTICLE 6 - WITHDRAWAL OF BIDS

- 6.1 Any bid may be withdrawn prior to the time designated for receipt of bids on written or telegraphic request. Telegraphic withdrawal of bids must be confirmed over the Bidder's signature by written notice postmarked on or before the date and time set for receipt of bids.
- 6.2 Withdrawn bids may be resubmitted up to the time designated for the receipt of bids.
- 6.3 No bids shall be withdrawn within thirty days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids.

## ARTICLE 7 - CONTRACT AWARD

- 7.1 The City of Newton will award the contract to the lowest eligible and responsible Bidder within thirty days, Saturdays, Sundays, and legal holidays excluded after the opening of bids.
- 7.2 The City of Newton reserves the right to waive any informalities in or to reject any or all Bids if it be in the public interest to do so.
- 7.3 As used herein, the term "lowest responsible and eligible Bidder" shall mean the Bidder (1) whose bid is the lowest of those bidders possessing the skill, ability and integrity necessary for the faithful performance of the work; (2) who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (3) who, where the provisions of section eight B of chapter twenty-nine apply, shall have been determined to be qualified thereunder.
- 7.4 Subsequent to the award and within five (5) days, Saturday, Sundays and legal holidays excluded, after the prescribed forms are presented for signature, the successful Bidder shall execute and deliver to the City a Contract in the form included in the Contract Documents in such number of counterparts as the City may require.
- 7.5 In the event that the City receives low bids in identical amount from two or more responsive and responsible Bidders, the City shall select the successful Bidder by a blind selection process such as flipping a coin or drawing names from a hat. The low Bidders who are under consideration will be invited to attend and observe the selection process.

## ARTICLE 8 - TAXES

- 8.1 The Bidder shall not include in this bid any tax imposed upon the sale or rental of tangible personal property in this Commonwealth, such as any and all building materials, supplies, services and equipment required to complete the work.
- 8.2 The City is exempt from payment of the Massachusetts Sales Tax, and the Bidder shall not include any sales tax on its bid. The City's exemption Number is E-046-001-404.

**END OF SECTION**

**CITY OF NEWTON**

**DEPARTMENT OF PURCHASING**

**BID FORM #11-72**

- A. The undersigned proposes to supply and deliver the materials specified below in full accordance with the Contract Documents and Project Manual supplied by the City of Newton entitled:

**RECONSTRUCTION OF WOODLAND ROAD  
A SCENIC ROADWAY  
(From Washington St. to Central St.)**

for the contract price specified below, subject to additions and deduction according to the terms of the specifications.

- B. This bid includes addenda number(s) \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_,
- C. The Contractor shall insert prices for each item in ink, in both words and figures.

\_\_\_\_\_ Dollars and \$ \_\_\_\_\_  
(Contract price shall equal the Total of the attached Item Sheets)

COMPANY NAME: \_\_\_\_\_

- D. The undersigned has completed and submits herewith the following documents:

- ☐ Bidder's Qualification Form and References, 2 pages
- ☐ Signed Bid Form, 2 pages
- ☐ Item Sheets, 19 pages
- ☐ Certificate of Non-Collusion, 1 page
- ☐ A five percent (5%) bid deposit.

- E. The undersigned agrees that, if selected as general contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the City of Newton, execute a contract in accordance with the terms of this bid **and furnish a labor and materials payment bond** of a surety company qualified to do business under the laws of the commonwealth and satisfactory to the City of Newton in the **sum not less than 50% of the contract price**, the premiums for which are to be paid by the contractor and are included in the contract price.

The undersigned hereby certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work and that s/he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A of M.G.L. Chapter 30, s 39M.

The undersigned certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work; (2) that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration ("OSHA") that is at least 10 hours in duration at the time the employee begins work and who shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and (3) that all employees to be employed in the work subject to this bid have successfully completed a course in construction safety and health approved by the United States OSHA that is at least 10 hours in duration. The undersigned understands

that any employee found on a worksite subject to this section without documentation of successful completion of a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration shall be subject to immediate removal.

The undersigned further certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity. The undersigned further certifies under penalty of perjury that the said undersigned is not presently debarred from doing public construction work in the Commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

The undersigned further certifies under the penalties of perjury that they have familiarized themselves with the changes to the Prevailing Wage Rates, Price Adjustment Clauses, in accordance to Chapter 303 Acts of 2008.

Date \_\_\_\_\_

\_\_\_\_\_  
(Name of General Bidder)

BY: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name and Title of Signatory)

\_\_\_\_\_  
(Business Address)

\_\_\_\_\_  
(City, State Zip)

\_\_\_\_\_/\_\_\_\_\_  
(Telephone) (FAX)

\_\_\_\_\_  
(E-mail address)

**NOTE:** If the bidder is a corporation, indicate state of incorporation under signature, and affix corporate seal; if a partnership, give full names and residential addresses of all partners; if an individual, give residential address if different from business address; and, if operating as a d/b/a give full legal identity. Attach additional pages as necessary.

**END OF SECTION**

## CITY OF NEWTON

### BIDDER'S QUALIFICATIONS AND REFERENCES FORM

All questions must be answered, and the data given must be clear and comprehensive. Please type or print legibly. If necessary, add additional sheet for starred items. This information will be utilized by the City of Newton for purposes of determining bidder responsiveness and responsibility with regard to the requirements and specifications of the Contract.

1. FIRM NAME: \_\_\_\_\_
2. WHEN ORGANIZED: \_\_\_\_\_
3. INCORPORATED? \_\_\_\_ YES \_\_\_\_ NO DATE AND STATE OF INCORPORATION: \_\_\_\_\_
- \* 4. LIST ALL CONTRACTS CURRENTLY ON HAND, SHOWING CONTRACT AMOUNT AND ANTICIPATED DATE OF COMPLETION:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \* 5. HAVE YOU EVER FAILED TO COMPLETE A CONTRACT AWARDED TO YOU?  
\_\_\_\_ YES \_\_\_\_ NO  
IF YES, WHERE AND WHY?  
\_\_\_\_\_  
\_\_\_\_\_
- \* 6. HAVE YOU EVER DEFAULTED ON A CONTRACT? \_\_\_\_ YES \_\_\_\_ NO  
IF YES, PROVIDE DETAILS.  
\_\_\_\_\_  
\_\_\_\_\_
- \* 7. LIST YOUR VEHICLES/EQUIPMENT AVAILABLE FOR THIS CONTRACT:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- \* 8. IN THE SPACES FOLLOWING, PROVIDE INFORMATION REGARDING CONTRACTS COMPLETED BY YOUR FIRM SIMILAR IN NATURE TO THE PROJECT BEING BID. A MINIMUM OF FOUR (4) CONTRACTS SHALL BE LISTED. PUBLICLY BID CONTRACTS ARE PREFERRED, BUT NOT MANDATORY.  
  
PROJECT NAME: \_\_\_\_\_  
OWNER: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_  
DOLLAR AMOUNT: \$ \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_  
PUBLICLY BID? \_\_\_\_ YES \_\_\_\_ NO

TYPE OF WORK?: \_\_\_\_\_  
CONTACT PERSON: \_\_\_\_\_ TELEPHONE #: (\_\_\_\_)\_\_\_\_\_  
CONTACT PERSON'S RELATION TO PROJECT?: \_\_\_\_\_  
(i.e., contract manager, purchasing agent, etc.)  
\_\_\_\_\_

PROJECT NAME: \_\_\_\_\_  
OWNER: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_  
DOLLAR AMOUNT: \$ \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_  
PUBLICLY BID? \_\_\_\_\_ YES \_\_\_\_\_ NO  
TYPE OF WORK?: \_\_\_\_\_  
CONTACT PERSON: \_\_\_\_\_ TELEPHONE #: (\_\_\_\_)\_\_\_\_\_  
CONTACT PERSON'S RELATION TO PROJECT?: \_\_\_\_\_  
(i.e., contract manager, purchasing agent, etc.)  
\_\_\_\_\_

PROJECT NAME: \_\_\_\_\_  
OWNER: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_  
DOLLAR AMOUNT: \$ \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_  
PUBLICLY BID? \_\_\_\_\_ YES \_\_\_\_\_ NO  
TYPE OF WORK?: \_\_\_\_\_  
CONTACT PERSON: \_\_\_\_\_ TELEPHONE #: (\_\_\_\_)\_\_\_\_\_  
CONTACT PERSON'S RELATION TO PROJECT?: \_\_\_\_\_  
(i.e., contract manager, purchasing agent, etc.)  
\_\_\_\_\_

PROJECT NAME: \_\_\_\_\_  
OWNER: \_\_\_\_\_  
CITY/STATE: \_\_\_\_\_  
DOLLAR AMOUNT: \$ \_\_\_\_\_ DATE COMPLETED: \_\_\_\_\_  
PUBLICLY BID? \_\_\_\_\_ YES \_\_\_\_\_ NO  
TYPE OF WORK?: \_\_\_\_\_  
CONTACT PERSON: \_\_\_\_\_ TELEPHONE #: (\_\_\_\_)\_\_\_\_\_  
CONTACT PERSON'S RELATION TO PROJECT?: \_\_\_\_\_  
(i.e., contract manager, purchasing agent, etc.)  
\_\_\_\_\_

9. The undersigned certifies that the information contained herein is complete and accurate and hereby authorizes and requests any person, firm, or corporation to furnish any information requested by the City of Newton in verification of the recitals comprising this statement of Bidder's qualifications and experience.

DATE: \_\_\_\_\_ BIDDER: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

PRINTED NAME: \_\_\_\_\_ TITLE: \_\_\_\_\_

**END OF SECTION**



## **CERTIFICATE OF NON-COLLUSION**

The undersigned certifies under penalties of perjury that this bid or proposal has been made and submitted in good faith and submitted in good faith and without collusion or fraud with any other person. As used in this certification, the word “person” shall mean any natural person, business, partnership, corporation, union, committee club, or other organization, entity, or group or individuals.

---

(Signature of individual)

---

Name of Business

## CONTRACT FORMS

The forms are provided for informational purposes only.

The awarded bidder will be required to complete and submit the following documents in order to execute a contract pursuant to this bid.

**None of the following forms are required at the time of bid submittal.**

# CITY - CONTRACTOR AGREEMENT

## CONTRACT NO. C -

THIS AGREEMENT made this \_\_\_\_ day of \_\_\_\_\_ in the year Two Thousand and Eleven by and between the CITY OF NEWTON, a municipal corporation organized and existing under the laws of the Commonwealth of Massachusetts, hereinafter referred to as the CITY, acting through its Chief Procurement Officer, but without personal liability to him, and hereinafter referred to as the CONTRACTOR.

The parties hereto for the considerations hereinafter set forth agree as follows:

**ARTICLE 1. STATEMENT OF WORK.** The Contractor shall furnish all labor, materials, and equipment and perform all work required in strict accordance with the Contract Documents for the following project:

**RECONSTRUCTION OF WOODLAND ROAD  
A SCENIC ROADWAY  
(From Washington St. to Central St.)**

**ARTICLE 2. TIME OF COMPLETION.** The Contractor shall commence work under this Contract on the date specified in the written notice of the City to proceed and shall fully complete all work hereunder within the time specified in the Summary of Work and Specific Work Requirements of the Project Manual. Time is of the essence with regard to this contract, with all work to be completed within one-hundred sixty **(160) calendar days from the Notice To Proceed..** Failure to complete within the time specified shall be subject to the assessment of liquidated damages in accordance with the provisions contained in the Project Manual.

**ARTICLE 3. THE CONTRACT PRICE.** The City shall pay the Contractor for the full and satisfactory performance of the Contract, in current funds a sum not to exceed:

(\$ )

**ARTICLE 4. CONTRACT DOCUMENTS.** The Contract Documents consist of the following documents which are either attached to this Agreement or are incorporated herein by reference:

- a. This CITY-CONTRACTOR Agreement;
- b. The City's Invitation For Bid #11-72 issued by the Purchasing Department;
- c. The Project Manual for: Reconstruction of Woodland Road, A Scenic Roadway, (From Washington St. to Central St.), including the Instructions to Bidders; General Conditions; Special Conditions; MWBE/AA Requirements, Wage Rate Requirements and Wage Rate Schedule(s) including any updated prevailing wage rate schedules if applicable; The Supplementary Special Conditions; General Requirements and Project Specifications; and Drawings, if included or referenced therein;
- d. Addenda Number(s) \_\_\_\_\_;
- e. The Bid Response of the CONTRACTOR submitted for this Project and accompanying documents and certifications;
- f. Certificate(s) of Insurance and surety bond(s) submitted by the CONTRACTOR in connection with this Project;

g. Duly authorized and executed Amendments, Change Orders or Shipping Orders issued by the CITY after execution of this CITY-CONTRACTOR Agreement.

This CITY-CONTRACTOR Agreement, together with the other documents enumerated in this Article, constitute the entire Agreement between the CITY and the CONTRACTOR.

**ARTICLE 5. ALTERNATES.** The following Alternates have been accepted and their costs are included in the Contract Price stated in Article 3 of this Agreement:

Alternates: N/A

**ARTICLE 6. APPLICABLE STATUTES.** All applicable federal, state and local laws and regulations are incorporated herein by reference and the Contractor agrees to comply with same.

IN WITNESS WHEREOF, the parties have caused this instrument to be executed under seal the day and year first above written.

**CONTRACTOR**

By \_\_\_\_\_  
Title \_\_\_\_\_

Date \_\_\_\_\_

*Affix Corporate Seal Here*

City funds in the amount of

\$\_\_\_\_\_ are  
available in account number  
33L401W-586002B

I further certify that the Mayor, or his  
designee, is authorized to execute contracts  
and approve change orders

By \_\_\_\_\_  
*Comptroller of Accounts*

Date \_\_\_\_\_

**CITY OF NEWTON**

By \_\_\_\_\_  
*Chief Procurement Officer*

Date \_\_\_\_\_

By \_\_\_\_\_  
*Commissioner of Public Works*

Date \_\_\_\_\_

Approved as to Legal Form and Character

By \_\_\_\_\_  
*Associate City Solicitor*

Date \_\_\_\_\_

**CONTRACT & BONDS ARE APPROVED**

By \_\_\_\_\_  
*Mayor or his designee*

Date \_\_\_\_\_

## CERTIFICATE OF AUTHORITY - CORPORATE

1. I hereby certify that I am the Clerk/Secretary of \_\_\_\_\_  
(insert full name of Corporation)
2. corporation, and that \_\_\_\_\_  
(insert the name of officer who signed the **contract and bonds.**)
3. is the duly elected \_\_\_\_\_  
(insert the title of the officer in line 2)
4. of said corporation, and that on \_\_\_\_\_  
(insert a date that is ***ON OR BEFORE*** the date the officer signed the **contract and bonds.**)

at a duly authorized meeting of the Board of Directors of said corporation, at which all the directors were present or waived notice, it was voted that

5. \_\_\_\_\_ the \_\_\_\_\_  
(insert **name** from line 2) (insert **title** from line 3)

of this corporation be and hereby is authorized to execute contracts and bonds in the name and on behalf of said corporation, and affix its Corporate Seal thereto, and such execution of any contract of obligation in this corporation's name and on its behalf, with or without the Corporate Seal, shall be valid and binding upon this corporation; and that the above vote has not been amended or rescinded and remains in full force and effect as of the date set forth below.

6. ATTEST: \_\_\_\_\_ *AFFIX CORPORATE*  
(Signature of **Clerk or Secretary**)\* *SEAL HERE*
7. Name: \_\_\_\_\_  
(Please print or type name in line 6)\*
8. Date: \_\_\_\_\_  
(insert a date that is ***ON OR AFTER*** the date the officer signed the **contract and bonds.**)

\* The name and signature inserted in lines 6 & 7 **must** be that of the **Clerk or Secretary** of the corporation.

## ATTESTATION

Pursuant to MG c. 62C, § 49A, the undersigned acting on behalf of the Contractor, certifies under the penalties of perjury that, to the best of the undersign's knowledge and belief, the Contractor is in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.\*

\_\_\_\_\_  
\*\*Signature of Individual  
or Corporate Contractor (Mandatory)

\_\_\_\_\_  
\*\*\* Contractor's Social Security Number  
(Voluntary) or Federal Identification Number

By: \_\_\_\_\_  
Corporate Officer  
(Mandatory, if applicable)

Date: \_\_\_\_\_

\* The provision in the Attestation relating to child support applies only when the Contractor is an individual.

\*\* Approval of a contract or other agreement will not be granted unless the applicant signs this certification clause.

\*\*\* Your social security number will be furnished to the Massachusetts Department of Revenue to determine whether you have met tax filing or tax payment obligations. Providers who fail to correct their non-filing or delinquency will not have a contract or other agreement issued, renewed, or extended. This request is made under the authority of GL c. 62C, § 49A.

## CITY OF NEWTON, MASSACHUSETTS

### PAYMENT BOND

Know All Men By These Presents:

That we, \_\_\_\_\_, as PRINCIPAL, and \_\_\_\_\_, as SURETY, are held and firmly bound unto the City of Newton as Obligee, in the sum of \_\_\_\_\_ dollars (\$\_\_\_\_\_) to be paid to the Obligee, for which payments well and truly to be made, we bind ourselves, our respective heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

Whereas, the said PRINCIPAL has made a contract with the Obligee, bearing the date of \_\_\_\_\_, 2011 for the construction of \_\_\_\_\_ in Newton, Massachusetts.  
(Project Title)

Now, the conditions of this obligation are such that if the PRINCIPAL and all Sub-contractors under said contract shall pay for all labor performed or furnished and for all materials used or employed in said contract and in any and all duly authorized modifications, alterations, extensions of time, changes or additions to said contract that may hereafter be made, notice to the SURETY of such modifications, alterations, extensions of time, changes or additions being hereby waived, the foregoing to include any other purposes or items set out in, and to be subject to, provisions of M.G.L. c. 30, sec. 39A, and M.G.L. c. 149 sec. 29, as amended, then this obligation shall become null and void; otherwise it shall remain in full force, virtue and effect.

In Witness Whereof, the PRINCIPAL and SURETY have hereto set their hands and seals this \_\_\_\_day of \_\_\_\_\_2011.

PRINCIPAL

SURETY

\_\_\_\_\_

\_\_\_\_\_

BY \_\_\_\_\_

BY \_\_\_\_\_

(SEAL)

(ATTORNEY-IN-FACT) (SEAL)

\_\_\_\_\_

(Title)

ATTEST: \_\_\_\_\_

ATTEST: \_\_\_\_\_

**CITY OF NEWTON**

**GENERAL CONDITIONS OF THE CONTRACT**

**FOR PUBLIC WORKS CONSTRUCTION**

**ARTICLE 1**

(DELETED)

**ARTICLE 2**

**Definitions**

The word "Commissioner" shall mean the official duly authorized to act for the City of Newton in the execution of the work of this contract, acting directly or through properly authorized agents.

The word "Engineer," or "City Engineer," shall mean the City Engineer of the City of Newton, acting directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.

The word "Contractor" shall mean the party or parties contracting to perform the work covered by this contract or his, or their, legal representatives, successors or assigns.

The word "Plan" shall mean plans referred to and included in the Project Manual for this contract. The word "City" shall mean the City of Newton.

**ARTICLE 3**

**Plans, Drawings, Profiles**

1. The work shall be done in accordance with plans referred to in Article 1 and such further working and detail plans, drawings and profiles as may be furnished from time to time by the Engineer. All said plans, general and detail, are to be deemed a part of this contract, and the said plans, specifications and contract are to be considered together, so that any work mentioned in the contract, though not shown on the plans, and any work shown on the plans though not mentioned in the contract, is to be executed by the Contractor as a part of this contract. Figured dimensions are to prevail over scale. All things which in the opinion of the Engineer may fairly be inferred from the contract, plans and specifications, are to be executed by the Contractor as a part of the contract; and the Engineer shall be sole judge as to whether detail plans, drawings and profiles conform to the general plans and the contract.

**Discrepancy in Plans**

2. The Contractor shall carefully examine all said plans, profiles, drawings, specifications and orders; all figures, dimensions, lines, marks and scales thereof, and all directions of the Commissioner and the Engineer relating to the work, and conform to those in relation to which there is no doubt or discrepancy, but at once submit all cases of doubt or discrepancy to the Engineer for adjustment. Anything done on any part of the work for which special information or drawing should be procured, unless done in accordance with such information or drawing, or anything done in relation to which there is doubt or discrepancy, except in accordance with the adjustment thereof, or done in violation of law or public authority, is to be redone if the Commissioner shall so direct.

**ARTICLE 4**

**Inspection**

1. The Contractor in carrying on the contract shall conform to all determinations and directions of the Engineer relating to the proper interpretation of the plans, specifications, profiles or drawings, the fitness of persons employed on the work or the number thereof, or the suitability, amount, quality, and value of anything done or any materials used, and the Contractor shall permit the Commissioner and the Engineer and persons designated by them to enter upon the work and inspect the same at all times and in all places, and shall provide safe and convenient facilities for making such entry and inspection.



**ARTICLE 5**  
**Change in Plans and Work**

1. The City, acting through the Commissioner and upon his written order only, from time to time given to the Contractor or his foreman, may change, increase or take away any part of the work, or change the specifications, plans, drawings, form or materials thereof. Any deduction or addition thereto is to be allowed, or paid for at a price to be determined, within not more than 15 days of the completion of the change, by the City Engineer acting in the same capacity as an architect in a building contract as between owner and contractor. Any demand for addition or deduction must be made in writing to the City Engineer within seven (7) days of the time change was ordered.

**ARTICLE 6**  
**Time and Manner of Doing the work - Beginning and Completion**

1. The Contractor shall begin work upon receipt of written Notice to Proceed. Once begun the work shall be carried out in a continuous and uninterrupted fashion with sufficient workforce and resources to assure completion by the date for completion established by the Contract Documents.

2. The Contractor shall carry on the work in accordance with the requirements of law and of all other public authorities, and to the satisfaction of the Commissioner; he shall give all notices, take out all permits, pay all charges and fees, give personal supervision to the work and keep thereon a competent foreman and sufficient employees, skilled in the several parts which are given them to do.

**Maintenance of Travel**

3. The Contractor shall conduct his work so as to interfere as little as possible with public travel, and shall give property owners proper means of access to their property where existing access has been cut off by the work. The Contractor shall keep the streets open for through travel except where, in the opinion of the Commissioner, it is necessary to close the street. The continuous length of the street occupied for the work shall be kept as short as possible, and no part of the work shall be unnecessarily delayed. Wherever the Commissioner shall direct, trenches shall be bridged by the Contractor in a proper and secure manner so as not to interrupt travel. Free access shall be maintained at all times to all water gates, gas gates, and fire hydrants.

**Abandonment of Work by Contractor**

4. In the event the City Engineer certifies to the Commissioner that the work is not being so carried forward or if the Contractor at any time is not carrying on the work to the satisfaction of the Commissioner, or is not observing any of the provisions of the contract, or has abandoned the work, or become insolvent or assigned his property, the City, acting by the Commissioner and at his discretion, may, with or without notice to the Contractor, or advertising for doing the work, and by contract, day labor or otherwise, do any part of the work which the Contractor has failed to do or replace any part not done to the satisfaction of the Commissioner, or take possession of the work and complete the same, and in doing so may use any implements, machinery or materials on or about the work which are the property of the Contractor, charging the Contractor any excess cost for completing the work, which excess cost the Contractor agrees to pay.

**ARTICLE 6A**  
**Liquidated Damages**

1. In case the work embraced in the contract shall not have been completed by the date stipulated therein, the Contractor shall pay to the City of Newton as liquidated damages a designated sum per calendar day for the entire period of overrun in accordance with the following Schedule of Deductions, and in addition, the Contractor shall pay without reimbursement the entire cost of all traffic officers, railroad flagmen, inspectors, or other personnel the City Engineer and/or the Chief Engineer of the railroad determines to be necessary during the period of overrun of time.

**SCHEDULE OF DEDUCTIONS**

Daily Charge  
Per Calendar Day

\$1,200.00

2. Whatever sum of money may become due and payable to the City of Newton by the Contractor under this Article may be retained out of money belonging to the Contractor in the hands and possession of the City of Newton. It is agreed that this Article shall be construed and treated by the parties to the contract not as imposing a penalty upon said Contractor for failing fully to complete said work as agreed on or before the time specified in the proposal, but as liquidated damages to compensate said City of Newton for all additional costs incurred by it because of the failure of the Contractor fully to complete said work on or before the date of completion specified in the proposal.

## **ARTICLE 6B**

### **Delays and Extensions of Time**

1. If the Contractor is delayed at any time in the progress of the work by an act or neglect of the City, or by changes in the work ordered by the City, or by unseasonably inclement weather, or by other causes deemed by the City Engineer to be beyond the Contractor's control, and which the City Engineer determines may justify delay, then the time for completion may be extended for such reasonable time as the City Engineer may determine.

2. No such extension of time will be allowed unless the Contractor submits a written request for an extension to the City Engineer no later than 10 calendar days of the start of the occurrence or event giving rise thereto. Each such request must describe the occurrence or event and specify the manner and extent that such occurrence or event is causing or has caused a delay in the work. The City Engineer shall promptly investigate each request and make his written determination to the Commissioner and the Contractor within 10 days after receipt of the request. In his determination the City Engineer may either grant, deny, or modify the length of the requested extension.

3. If the City Engineer's determination so warrants, the Commissioner shall authorize a written Change Order to the Contract extending the time for completion. No extension of time shall be deemed as granted until said Change Order has been duly executed by the parties.

4. Change Orders which may be executed by the City and the Contractor in connection with additions, extra labor and/or extra materials shall not be considered as allowing extensions of the time for completion unless the change order expressly specifies that additional time is allowed in connection with the work under the change order. Once a Change Order has been executed by the parties, any request by the Contractor for an extension of time based solely on the fact that additions, extra labor and/or extra materials are required by the Change Order will be denied by the City Engineer.

5. Permitting the Contractor to continue and finish the work or any part of it after the times fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of the City of Newton of any of its rights under the contract. The Contractor remains liable for damages caused other than by delay.

## **ARTICLE 7**

### **Lines and Grades**

1. The Contractor shall retain a Registered Land Surveyor who shall furnish such boards and stakes and cause to be placed thereon, such lines, marks and directions relating to the work as the Commissioner or City Engineer shall from time to time direct.

## **ARTICLE 8**

### **Public Service Pipes and Conduits**

1. The Contractor shall maintain such pipes or conduits of public service corporations or of the City as are across or within the lines of the work until such time as said public service corporations or the City assume the maintenance or removal of said pipes or conduits. The Commissioner will notify such public service corporations to that effect on the existence of such obstructions to the work being brought to his notice by the Contractor. The City will relocate either temporarily or permanently all water mains and water service pipes, or hydrants, and drains or sewers which may interfere with the work contemplated in this contract. (This clause is not to be construed as applying to such pipes as may be readily supported and protected during the progress of the work.) The cost of shutting off and turning on water in water mains during blasting shall be assumed by the City.

### **Protection of Existing Structures**

2. All existing gas pipes, water pipes, sewers, drains, conduits, or other structures which are uncovered by the excavation shall be carefully supported and protected from injury by the Contractor, and, in case of injury, they shall be restored by him, without compensation therefor, to as good condition as that in which they were found, and shall be kept in repair until 6 months after the completion of the work. The Contractor shall provide suitable temporary channels for water at all water courses.

Wherever the work passes under or adjacent to street railway tracks, the Contractor shall make all necessary arrangements with the railway company for doing any work which may affect the property of the company or interfere with the operating of the railway, and he shall be liable for any damage that may be caused by any act, omission or neglect on his part, and shall pay all expenses of every kind incidental to this work.

### **Changing the Location of Existing Structures**

3. Whenever it becomes necessary to change the location of any water or gas pipes, sewers, drains, conduits or other structures not otherwise provided for in these specifications, the Contractor shall do the whole or such portions of the work of making such changes as the Commissioner may require, and shall receive in payment therefor the reasonable cost of the work done as determined by the Commissioner plus 15 per cent of such cost. In estimating such cost, no allowance shall be made to the Contractor for the use of tools not especially provided for this work, for general superintendence, or for any overhead expenses except liability insurance.

## **ARTICLE 9**

### **Co-operation with Other Contractors**

1. The Contractor shall conduct the work in such manner as not to interfere with other work being done by the City, by contract or otherwise, and if deemed necessary by the Commissioner, the work under this contract shall conform to the progress of said other work; shall co-operate with other contractors or employees who may be doing work for the City, and with public service corporations affected by the work, in arranging for storage places, connections, bracings, temporary support for structures, repairs, etc.

## **ARTICLE 10**

### **Subcontracts**

1. The Contractor, in any contract with a Subcontractor, shall provide that the Subcontractor shall be subject to all specifications, terms, provisions, conditions, requirements and liabilities set forth in this contract so far as such specifications, terms, provisions, conditions, requirements and liabilities are applicable to the work to be done under such Subcontract, and shall also provide that such Subcontract shall be terminated by the Contractor whenever the Commissioner shall certify to him in writing that in his opinion the work of the Subcontractor is unnecessarily or unreasonably delayed or that the Subcontractor has violated any of the provisions of this contract. The Contractor shall at once terminate such subcontract if the Commissioner, after certifying as aforesaid, shall in writing direct the Contractor to make such termination.

2. Subcontracts shall be made in writing and the Contractor shall furnish the Commissioner with a copy of his subcontracts on demand.

3. Pursuant to the provisions of M.G.L. Ch. 30, Sec. 39F (1), the following provisions are included in the General Conditions:

(a) Forthwith after the general contractor receives payment on account of a periodic estimate, the general contractor shall pay to each subcontractor the amount paid for the labor performed and the materials furnished by that subcontractor, less any amount specified in any court proceedings barring such payment and also less any amount claimed due from the subcontractor by the general contractor.

(b) Not later than the sixty-fifth day after each subcontractor substantially completes his work in accordance with the plans and specifications, the entire balance due under the subcontract less amounts retained by the awarding authority as the estimated cost of completing the incomplete and unsatisfactory items of work, shall be due the subcontractor; and the awarding authority shall pay that amount to the general contractor. The general contractor shall forthwith pay to the subcontractor the full amount received from the awarding authority less any amount specified in any court proceedings barring the payment and also less any amount claimed due from the subcontractor by the general contractor.

(c) Each payment made by the awarding authority to the general contractor pursuant to subparagraphs (a) and (b) of this paragraph for the labor performed and the materials furnished by a subcontractor shall be made to the general contractor for the account of the subcontractor; and the awarding authority shall take reasonable steps to compel the general contractor to make each such payment to each such subcontractor. If the awarding authority has received a demand for direct payment from a subcontractor for any amount which has already been included in a payment to the general contractor or which is to be included in a payment to the general contractor for payment to the subcontractor as provided in subparagraphs (a) and (b), the awarding authority shall act upon the demand as provided in this section.

(d) If, within seventy days after the subcontractor has substantially completed the subcontract work, the subcontractor has not received from the general contractor the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount retained by the awarding authority, the demand shall be by a sworn

statement delivered to or sent by certified mail to the awarding authority, and a copy shall be delivered to or sent by certified mail to the general contractor at the same time. The demand shall contain a detailed breakdown of the balance due under the subcontract and also a statement of the status of the completion of the subcontract work shall be valid even if delivered or mailed prior to the seventieth day after which the subcontractor has substantially completed the subcontract work. Within ten days after the subcontractor has delivered or so mailed the demand to the awarding authority and delivered or so mailed a copy to the general contractor, the general contractor may reply to the demand. The reply shall be by a sworn statement delivered to or sent by certified mail to the awarding authority and a copy shall be delivered to or sent by certified mail to the subcontractor at the same time. The reply shall contain a detailed breakdown of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor and of the amount due for each claim made by the general contractor against the subcontractor.

(e) Within fifteen days after receipt of the demand by the awarding authority, but in no event prior to the seventieth day after substantial completion of the subcontract work, the awarding authority shall make direct payment to the subcontractor of the balance due under the subcontract including any amount due for extra labor and materials furnished to the general contractor, less any amount (i) retained by the awarding authority as the estimated cost of completing the incomplete or unsatisfactory items of work (ii) specified in any court proceedings barring such payment, or, (iii) if the reply shall not deduct from a direct payment any amount as provided in part (iii) if the reply is not sworn to, or for which the sworn reply does not contain the detailed breakdown required by subparagraph (d). The awarding authority shall make further direct payments to the subcontractor forthwith after the removal of the basis for deductions from direct payments made as provided in parts (i) and (ii) of this subparagraph.

(f) The awarding authority shall forthwith deposit the amount deducted from a direct payment as provided in part (iii) of subparagraph (e) in an interest-bearing joint account in the names of the general contractor and the subcontractor in a bank in Massachusetts selected by the awarding authority or agreed upon by the general contractor and the subcontractor and shall notify the general contractor and the subcontractor of the date of the deposit and the bank receiving the deposit. The bank shall pay the amount in the account, including accrued interest, as provided in an agreement between the general contractor and the subcontractor or as determined by decree of a court of competent jurisdiction.

(g) All direct payments and all deductions from demands for direct payments deposited in an interest-bearing account or accounts in a bank pursuant to subparagraph (f) shall be made out of amounts payable to the general contractor at the time of receipt of a demand for direct payment from a subcontractor and out of amounts which later become payable to the general contractor and in the order of receipt of such demands from subcontractors. All direct payments shall discharge the obligation of the awarding authority to the general contractor to the extent of such payment.

(h) The awarding authority shall deduct from payments to a general contractor amounts which, together with deposits in interest-bearing accounts pursuant to subparagraph (f), are sufficient to satisfy all unpaid balances of demands for direct payment received from subcontractors. All such amounts shall be earmarked for such direct payments, and the subcontractors shall have a right in such deductions prior to any claims against such amounts by creditors of the general contractor.

## **ARTICLE 11**

### **Compensation for Work**

1. Subject to any provisions in Paragraph 7, the price named in the proposal and accepted by the City shall be paid by the City and received by the Contractor as full compensation for furnishing materials and for use of tools, forms, machinery and other implements, and for labor in moving materials and executing all the work contemplated in this contract, also for loss or damage arising from delay however occasioned, or out of the nature of the work aforesaid or from the action of the elements, from floods, or from any unforeseen obstructions or difficulties which may be encountered in the prosecution of the same and for all risks of every description connected with the work and for well and faithfully completing the work in the proper manner and according to the plans and specifications and requirements of the Commissioner under them.

2. During the first week of each calendar month, the City Engineer shall cause all work done by the Contractor during the previous month to be measured and shall estimate the value thereof and, on or before the 10th of each month issue a certificate to the Commissioner of the measurements and the amount due the Contractor according to the terms of his contract.

3. The City shall pay the Contractor on approval of the Commissioner monthly on or before the 18th of each month for all work done during the preceding month according to the aforementioned certificate of the City Engineer, less 5 per cent of the amount of such work and less any amounts due the City by the Contractor.

4. Within ten days after the completion of the work as determined by the Commissioner, the City Engineer shall issue to the Commissioner a final certificate of the total amount of work done and the money due the Contractor therefor, crediting thereon the amounts of the previous payments. In making the final certificate, the City Engineer shall not be bound by any preceding certificate or estimate of the amount of work done or materials furnished.

### **Final Payment--Claims Against Contractor**

5. At the expiration of 65 days after the completion of the work as determined by the Commissioner, the City shall, unless claims are made or notice of liability against the City is given, pay the Contractor, on the approval of the Commissioner, the percentages retained and the balance due the Contractor according to the aforementioned final certificate of the City Engineer less any indebtedness of the Contractor to the City. If a claim or claims are made, or notice of liability given, such amounts due the Contractor may be paid upon satisfaction of such claims or upon furnishing of indemnity to said City against all loss, cost, damage or expense by reason of such claims. In the event of no known claims or liens the City may, at its option, pay within 35 days.

6. The City, on making any payment after the completion of the work, shall be released from all claim or liability to the Contractor for anything done or used, or for any loss or injury sustained in carrying on the contract, or for any act, omission, neglect or mistake of the City or any person relating to or affecting the contract, except for the balance of any sum retained as aforesaid.

### **Extra Work**

7. The Contractor shall be paid for any additions, or deductions as provided in Article 5, paragraph 1, and for extra labor done by, and for extra materials furnished by him in compliance with the written order only of the Commissioner, calling for work not similar in character to that covered by the items given in the proposal, and for which no price is set in the said written order, the direct (not including consequential) cost to the Contractor, as determined to be reasonable by the Commissioner, plus fifteen per cent of said costs as so determined in regard to labor only. For teams or trucks so furnished, no payment shall be made to the Contractor beyond the current local rate as determined by the Commissioner in each case. The direct cost of labor may include the cost of mechanics and laborers furnished and a reasonable proportion of the time of the foreman and timekeeper, but it shall in no case include any charge for the use of tools, for establishment charges or for time spent by the Contractor. The actual cost of insurance on extra pay rolls and of materials furnished for extra work, shall be paid without any addition. The labor and materials so ordered shall constitute a part of the work to be done under the contract; and all and singular the provisions of the contract shall apply to said labor and materials as if the same were specified therein. The Contractor shall have no claim for the above mentioned extra labor and materials unless he furnishes the details and bills therefor within one week after doing any such labor or furnishing any such materials.

8. No claim of the Contractor against the City under this contract shall be deemed valid unless such claim is presented to the Commissioner within ten days from the time when the Contractor first knows of, or has opportunity to know of, the acts and circumstances on which such claim is based.

9. A payment or payments to the Contractor, in cases where these provisions or any of them, are not complied with, shall not be construed as a waiver of said provisions or any part thereof.

### **Contract Made Subject to Appropriations**

10. This contract is made subject to appropriation heretofore made and shall not be altered unless the Contractor, the sureties on the bond, if any, the officer making the contract and the Mayor shall in writing agree thereto.

## **ARTICLE 12**

### **Responsibility for Work--Contractor's Responsibility**

1. The Contractor has made his proposal from his own examinations and estimates, and shall not hold the City, its agents, or employees, responsible for or bound by, any schedule, estimate, sounding, boring, or any plan of any part of the work; shall, if any error in any plan, drawing, specification or direction relating to anything to be done under the contract come to his knowledge, report it at once to the Commissioner; shall not, except as the Commissioner shall authorize in writing, assign or sublet any part of the contract except for the supply of materials and plant, or of anything to be done thereunder; shall, subject to the provisions of the contract take all responsibility of, and bear all losses resulting to him in carrying on the contract, and shall assume the defense of, and hold the City, its agents and employees harmless from all suits and claims against them, or any of them, arising from the use of any invention, patent or patent right, material, labor or implement, by or from any act or omission or neglect of the Contractor, his Subcontractor, his agents or employees, in carrying on the contract, or for any liability of any nature arising under the contract. The Contractor shall be solely responsible and liable for, and shall fully protect and indemnify the City against all claims for damages to persons or property occasioned by or resulting from blasting or other methods or processes in the work of construction, whether such damages be attributable to negligence of the Contractor, his employees or his Subcontractor or otherwise.



### **ARTICLE 13**

#### **LIGHTS--GUARDS**

1. The Contractor shall assume all responsibilities of the work and take all proper precautions to protect persons and property from injury and unnecessary interference; leave a reasonably unobstructed way along public and private places for pedestrians, teams, and vehicles, and for access to hydrants; provide proper walks over or around any obstruction made in a public or private place in carrying on the contract, and maintain from the beginning of twilight through the whole of every night, on or near the obstruction sufficient lights and guards to protect travelers from injury thereby, and if, after one notification from the Commissioner that said lights and guards are not sufficient, the Contractor has not placed additional lights and guards to the satisfaction of the Commissioner, the Commissioner shall have the right to take charge of that part of the work at the expense of the Contractor. While the work is suspended he shall keep all roadways and sidewalks in proper condition, and when the work is completed put the place and vicinity in proper condition and so leave them.

The Contractor shall provide proper means of access to property where the existing access is cut off by the Contractor and replace or put in good condition every conduit, catch-basin, tree, wall, fence, or other thing injured by the Contractor in carrying on the contract, unless the same has been permanently done away with, on approval of the Commissioner, as being necessary to the proper carrying on of the contract.

### **ARTICLE 14**

#### **Guaranty**

1. Any settlement or other defect, or the failure of any part of the structure or the work due to defective materials or workmanship, that occurs within one year after the work is completed, is to be immediately repaired by the Contractor. In the event of any such settlement, defect, or failure causing liability to the City for damage to persons or property, the Contractor does by this clause agree to hold the City harmless and to assume the defense of any claims therefor.

2. Responsibility under this guaranty for the adequacy of the work does not relieve the Contractor of his obligation to comply with the terms of the contract and to conform to all the requirements of the plans and specifications, nor does it give him the right to deviate in any way from the details of design of the structure or the work.

### **ARTICLE 15**

#### **Defective Work and Materials**

1. The inspection of the work shall not relieve the Contractor of any of his obligations to fulfill his contract as herein described, and defective work shall be made good and unsuitable materials may be rejected, notwithstanding that such work and materials have been previously overlooked by the Engineer and accepted or estimated for payment. If the work or materials, or any part thereof shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good such defect in a manner satisfactory to the Engineer, and if any material brought upon the ground for use in the work or selected for the same, shall be condemned by the Engineer as unsuitable or not in conformity with the specifications, the Contractor shall forthwith remove such materials from the vicinity of the work. Nothing in this contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil, but all materials shall, upon being so attached or affixed, become the property of the City of Newton.

### **ARTICLE 16**

#### **Employment of Labor**

1. The Contractor shall give preference in employment, first to citizens of Massachusetts, second, to other citizens of the United States; and shall allow all employees on said work to lodge, board and trade where they choose, and shall not obstruct any other person in doing work for the City; and shall conform to all labor laws of the Commonwealth; and no laborer or teamster, workman or mechanic working within this Commonwealth in the employ of the Contractor or Subcontractor or other person doing or contracting to do the whole or a part of the work contemplated by the Contractor shall be requested to, or required to, or work more than eight hours in any one calendar day. This contract is subject to all the laws of the Commonwealth, and ordinances of the City and if any clause thereof does not conform to such laws and ordinances, such clause shall be void and such laws and ordinances operated in lieu thereof.

## **ARTICLE 17**

### **Laws and Regulations--Contractor to Comply with Law**

1. The Contractor shall keep fully informed of all existing or future acts of the legislature, and of all municipal ordinances, prohibitions, rules and regulations in any manner affecting the conduct of the work, and of all orders or decrees of any body or tribunal having any jurisdiction or authority over the materials, times, places and actions of those employed in the work embraced in the contract. The Contractor shall at all times observe and comply with all existing and future acts, ordinances, prohibitions, rules, regulations, orders and decrees; and shall protect and indemnify the city and its employees against any and all claims arising from or based on any violation of such acts, ordinances, prohibitions, rules, regulations, orders or decrees, and against all violations of law by the Contractor or his agents or employees.

**END OF SECTION**

## **CITY OF NEWTON**

### **MINORITY/ WOMEN BUSINESS ENTERPRISE PLAN**

**DECEMBER 1, 1999**

#### **STATEMENT OF POLICY:**

Whereas it is the policy of the government of the United States of America, the Commonwealth of Massachusetts and the City of Newton that no person shall be discriminated against in any manner whatsoever on the grounds of race, religion, color, sex, handicap or national origin; and

Whereas, it is the policy of the government of the United States of America that no person shall, on the grounds of race, color, sex or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program of activity funded entirely or in part by the City, the State or Federal government; and

Whereas, it is the policy of the government of the United States of America to encourage that Minority/Women Business Enterprises shall have the maximum practicable opportunity to participate in Federal and State assisted projects; and all City funded contracts; and

Whereas, it is the policy of the City of Newton to encourage that minority/women business enterprises shall have the maximum practicable opportunity to participate in all City funded contracts; and

Whereas, the City of Newton, as a recipient of Federal and State funds subscribes to the above policies and will fully comply With Federal, State and local laws and directives governing non-discrimination, equal opportunity and affirmative action in all municipal activities; and

Whereas, to further enunciate the equal opportunity policy of the City of Newton's Minority/Women Business Program, the following responsibilities are specified

This MINORITY/ WOMEN Business Enterprise Plan sets forth the administrative standards for the further implementation of the City of Newton's policy of the utilization of minority contractors and subcontractors.

The City of Newton strongly affirms that it will not discriminate in any contractual procedures against any persons because of race, color, religion, age, disability, sex or national origin. This policy shall be administered with a positive supportive attitude.

It is the responsibility of the City of Newton to take affirmative steps to implement this policy to insure equality of opportunity in conducting the Program including notifying those persons and businesses doing business with the City, that contracts for goods, services and construction, shall be made Without reference or regard to race, color, sex, age, handicap, religion or national origin.

Setti D. Warren Mayor



# **CITY OF NEWTON MINORITY/ WOMEN BUSINESS ENTERPRISE PLAN**

**DECEMBER 1, 1999**

## **I. DEFINITIONS:**

**A. Minority Person**- the term includes a person who is of Black Hispanic, Asian, American Indian or Cape Verdean origin.

**B. Minority Business Enterprise (MBE)** -- the term shall mean a business a) that is certified by SOMWBA; or b) 1 provides evidence satisfactory to the City's Affirmative Action Officer that it is a business owned or controlled by one or more of the following:

- an individual who is a minority person,
- a partnership or joint venture controlled by minority persons in which at least 51 % of the ownership interest is held by minority persons or,
- a corporation or other entity controlled by minority persons and in which at least 51 % of the stock is owned by one or more minority persons.

**C. Contract Compliance Officer** - the Chief Procurement Officer or his/her designee responsible for the implementation of Newton's Minority/Women Enterprise Plan ("MWBE Plan") and activities.

**D. MCAD** - Massachusetts Commission Against Discrimination.

**E. SOMWBA** -- State Office of Minority/Women Business Assistance,

**F. City** - The City of Newton.

**G. Women Business Enterprise (WBE)** - the term shall mean a business a) that is certified by SOMWBA; or b) provides evidence satisfactory to the City's Affirmative Action Officer that it is a business owned or controlled by one or more of the following:

- an individual who is a woman.
- a partnership or joint venture controlled by women in which at least 51% of the ownership interest is held by women, or
- a corporation or other entity controlled by women and in which at least 51% of the stock is owned by one or more women.

**H. MWBE** – Minority or Women Business Enterprise

## **II. GOALS:**

Newton's Minority/Women Enterprise Plan ("MWBE Plan") shall be guided by the goals presented below to promote minority/women opportunities within the City.

These goals comprise the framework for those activities to be implemented as part of the MWBE Plan:

To take affirmative action in expanding opportunities for minority and women owned firms in obtaining contracts within the City of Newton.

To assure that all contractors, regardless of race color, religion, creed, national origin, sex, age, ancestry or handicap, shall have equal opportunity to City contracting activities.

To award, of the total City contract dollars expended, 10 percent to MBE and 5 percent to WBE for construction; for goods and services, 5 percent WBE and 5 percent MBE.

### **III. SOLICITATION ACTIVITIES:**

To notify MWBEs of upcoming contracts for construction, professional services and supplies, funded in whole or in part with Federal, State, and City funds, the following activities will be undertaken. In addition on a regular basis, the City of Newton will distribute to its listing of MWBEs and SOMWBA, a summary of upcoming contract opportunities which are subject to the City's MWBE Plan.

#### **A. Construction Contracts**

All construction contracts with an estimated value over \$50,000 will be formally advertised within local, regional, minority and special interest publications at least 14 days prior to the bid opening date.

For all such construction contracts a "Notice of Solicitation" of a project going out to bid will be distributed to appropriate SOMWBA or City certified firms at least 14 days prior to the bid opening date.

#### **B. Contracts for Professional Services**

The City of Newton will send notification of its advertised Request for Proposals to appropriate! SOMWBA or City certified firms Responding MWBE firms will be considered for contract award within the bounds of generally accepted management practice or with the applicable procurement law relating to securing the lowest cost and best services available.

#### **C. Procurement of Supplies**

The City of Newton will (where feasible) utilize MWBEs for the procurement of supplies in accordance with City purchasing procedures. These efforts will be documented and reported to MCAD, and the Mayor's office on a quarterly basis.

### **IV. CONSTRUCTION ACTIVITIES:**

#### **A. Goals**

The City of Newton bid documents and contracts with an estimated value over \$50,000 will contain the City's goal of 10% for MBE and 5% for WBE utilization for subcontracts,

#### **B. Pre-Bid Conference**

To affirmatively further the opportunities available to prospective bidders, the City will hold a pre-bid conference 5-7 days prior to the bid opening date for all City construction contracts and subcontracts with an estimated value over \$50,000.

The pre-bid conference will provide an opportunity for contractors to: review and clarify the technical requirements of the projects, review the City's MWBE Plan; and review Equal Opportunity requirements. The City will advertise this conference and extend invitations to interested contractors as part of the notice of solicitation.

#### **C. Bid Submission**

All bids for City of Newton contracts with -an estimated value over \$50,000 shall include a certification of intent to be completed by the bidder swing his/her intent to comply with the City's MWBE Plan. Failure to include this certification shall be an informality which may be waived if such certification is received prior to the award of the contract.

**D. Contract Execution**

Upon notification of award of the contract, the bidder shall provide a written plan detailing how it will comply with the MWBE Plan

**E. Monitoring**

Throughout the duration of the contract, the City of Newton through its Contract Compliance Officer, will monitor the progress and activities of all contractors and subcontractors as they attempt to comply with the MWBE Plan.

**F. Enforcement**

In the case of clear neglect to make a good faith effort to comply with this MWBE Plan, the City of Newton reserves the right to designate contractor, after a hearing, as ineligible for future City bid awards.

**V. CONTRACT COMPLIANCE OFFICER/DUTIES AND RESPONSIBILITIES:**

The Contract Compliance Officer, as liaison between minority firms and the City of Newton will have the overall responsibility for the implementation of Newton's MWBE Plan. This responsibility includes the development, management, dissemination of information; the provision of technical assistance to minority firms including clarification of procedures to be implemented; maintenance of relevant documentation; completion of reporting requirements; and performance of monitoring and evaluation activities; and maintenance and updating of listings of minority/women business.

The Contract Compliance Officer has oversight of all City procurements for construction, professional services and supplies and shall coordinate the implementation of the MWBE Plan with other City departments.

**THE CITY OF NEWTON, MASSACHUSETTS  
SUPPLEMENTAL EQUAL EMPLOYMENT OPPORTUNITY  
ANTI-DISCRIMINATION AND AFFIRMATIVE ACTION PROGRAM**

- I. The requirements hereinafter set forth apply to construction contracts which involve an expenditure by the City of \$50,000 or more.
- II. For purposes of this contract "minority" refers to Asian Americans, Black, Hispanics American Indians and Cape Verdeans. The City refers to the- City of Newton
- III. During the performance of this contract the Contractor and all of (his) Subcontractors (hereinafter collectively referred to as the Contractor), for himself, his assignees, and successors, in interest, agree as follows:
  1. In connection with the performance of work under this contract, the Contractor shall not discriminate against any employee or applicant for employment because of race, color, religious creed, national origin, age or sex. The aforesaid provision shall include, but not be limited to, the following: layoff; termination; rates of pay or other forms of compensation; conditions or privileges of employment; and the selection of apprenticeship. The Contractor shall post hereafter in conspicuous places, available for employees and applicants for employment, notices to be provided by the City setting forth the provisions of the Fair Employment Practices Law of the Commonwealth (MGL Chapter 151B) . (See Attachment A)
  2. In connection with the performance of work under this contract, the Contractor shall undertake in good faith, affirmative action measures designed to eliminate any discriminatory barriers in the terms and conditions of employment on the grounds of race, color, religious creed, national origin, age or sex, and to eliminate and remedy any effects of such discrimination -.in the past. Such affirmative action shall. entail positive and aggressive measures to ensure equal employment: opportunity in the areas of hiring, upgrading, demotion or transfer, recruitment, 'Layoff or termination, rate of compensation, and in-service or apprenticeship training programs. This affirmative action shall. include all action required to guarantee equal employment opportunity for all persons, regardless of race, color, religious creed, national origin, age or sex. A 'purpose of- this provision is to ensure to the fullest extent possible an adequate supply of skilled tradesmen for this and future City public construction projects
- IV.
  1. As part of this obligation of remedial action under the foregoing section, the contractor shall maintain on this project a not less than 5 percent ratio of minority employee man hours to total man hours in each job category, including, but not limited to, bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers, and those "classes of work" enumerated in Section 44C of Chapter 149 of the Massachusetts General Laws.
  2. In the hiring of minority journeymen, apprentices, trainees and advanced trainees, the Contractor shall rely on referrals, from the Contractor's affirmative action program approved by the City, traditional referral methods utilized by the construction industry, and referrals from agencies, not more than three in number at any one Time, designated by the Liaison Committee or the City.
- V.
  1. At the discretion of the City, there may be established for the life of this contract a body to be known as the Liaison Committee, The Liaison Committee shall be composed of the Compliance Officer and one representative each from the Departments administering this project, hereinafter called the administering Departments, and such other representatives as may be designated by the City.
  2. The Contractor (or, his/her agent, if any, designated by him/her as the onsite equal employment opportunity officer) shall recognize the Liaison Committee as the affirmative action body, and shall establish a continuing working relationship with the Liaison Committee on all matters related to minority recruitment, referral, employment and training.
  3. The Contractor shall prepare manning tables on a quarterly basis.\* These shall be broken down into projections, by week, for workers required in each trade. Copies shall be furnished one week in advance of the initiation of work and quarterly thereafter to the City and to the Liaison Committee.
  4. Records of employment referral orders, prepared by the Contractor, shall be made available to the City and to the Liaison Committee on request.
  5. The contractor shall prepare weekly reports in a form approved by the City of hours worked in each trade by each employee, identified as minority or non-minority. Copies of these reports shall be provided at the end of each week to the City and to the Liaison Committee.

\* If job is less than three months, prepare for length of job.

- VI. If the Contractor shall use any sub contractor on any work performed under this contract, he/she shall take affirmative action to negotiate with qualified minority subcontractors. This affirmative action shall cover both pre-bid and post-bid periods. It shall include notification to the State Office of: Minority *Business Assistance* or As designee, while bids are in preparation, of all products, work or services for which the Contractor intends to negotiate bids.
- VII. In the employment of journeyman, apprentices, trainees, and advanced trainees, the Contractor shall give preference to citizens of the Commonwealth who have served in the armed forces of the United States in time of war and have been honorably discharged therefrom or released from active duty therein, and who are qualified to perform the work to which the employment relates, and, secondly to citizens of the Commonwealth generally, and, if such cannot be obtained in sufficient numbers, then to citizens of the United States
- VIII. A designee of the City and a designee of the Liaison Committee shall each have the right of access to the Construction site,
- IX. **Compliance with Requirements**  
The Contractor shall comply with the provisions of Chapter 151B of the Massachusetts General Laws, which are herein incorporated by reference and made as amended by Executive Order 227, and of Chapter 151B as amended, of the Massachusetts General Laws, both of which are herein incorporated by reference and made a part of this contract.
- X. **Non-Discrimination**  
The Contractor, in the performance of all work after award, and prior to completion of the contract work, will not discriminate on the grounds of race, color, religious creed, national origin, age or sex in employment practices, in the selection or retention of sub-contractors, or in the procurement of materials and rentals of equipment.
- XI. **Solicitations for sub-Contracts and for the Procurement of Materials and Equipment**  
In all solicitations either by competitive bidding or negotiation made by the Contractor either for work to be performed under a subcontract or for the procurement of materials or equipment, each potential subcontractor or supplier shall be notified in writing by the Contractor of the Contractor's obligations under his contract relative to non-discrimination and affirmative action.
- XII. **Bidders Certification Requirement**  
  
1. The following certification statement will be inserted in the bid document just above the bidder's signature.  
  
"The bidder hereby certifies he shall comply with the minority manpower ratio and specific action steps contained in the City of Newton, Massachusetts Supplemental Equal Employment-- Opportunity Anti-Discrimination and Affirmative Action Program. The Contractor receiving the award of the contract shall be required to obtain from each of its subcontractors and submit to the contracting or, administering agency prior to the performance of any work under said contract a certification by said subcontractor, regardless of tier, that it will comply with the minority manpower ratio and specific affirmative action steps contained in the City of Newton Massachusetts Supplemental Equal Employment Opportunity Anti -Discrimination and Affirmative Action Program.
- XIII. **Contractor's Certification**  
A Contractor's certification form must be signed by all successful low bidders prior to award by the City. A Contractor shall not be eligible for award of a contract unless the contractor has executed and submitted the Contractor's Certification, which shall be deemed a part of the resulting contract. (See Attachment B)
- XIV. **Subcontractor's Certification**  
Prior to the award of any subcontract, regardless of tier, the prospective subcontractor must execute and submit to the Prime Contractor a subcontractor's certification setting forth the subcontractor's compliance with this program, which shall be deemed a part of the resulting subcontract. (See Attachment C)

**XV. Compliance - Information, Reports and Sanctions**

1. The Contractor will provide all information and reports Required by the administering department or, the City on instruction issued by either of them and will permit access to its facilities and any books, records, accounts and other sources of information which may be determined by the City to affect the employment of personnel. This provision shall apply only to information pertinent to the City's supplementary affirmative action contract requirements. Where information required is in the exclusive possession of another who fails or refuses to furnish this information, the Contractor shall so certify to the administering department or the City as appropriate and shall set forth what efforts he/she has made to obtain the information.
2. Whenever the administering department, the City, or the Liaison Committee believes the General Contractor or any Subcontractor may not-, be operating in compliance with the terms of this Section, the City directly, or through its designated agent, shall conduct: an appropriate investigation, and may confer with the parties, to determine if such Contractor is operating in compliance with the terms of this Section. If the City or its agent finds the General Contractor or any Subcontractor not in compliance, it shall make a preliminary report on non-compliance, and notify such Contractor in writing of such steps as will in the judgement of the City or its agent bring such Contractor into compliance. In the event that such Contractor fails or refuses to fully perform such steps, the City shall make a final report of non-compliance, and recommend to the administering department the imposition of one or more of the sanctions listed below. If, however, the City believes the General Contractor or any Subcontractor has taken or is taking every possible measure to achieve compliance, it shall not make a final report of non-compliance. within fourteen days at the receipt of the recommendations of the City, the administering department shall move to impose one or more of the following sanctions, as it may deem appropriate to attain full and effective enforcement:
  - (a) The recovery by the administering department from the General Contractor of 1/100 of 11 of the contract award price or \$1000 whichever sum is greater, in the nature of liquidated damages or if a Subcontractor is in non-compliance, the recovery by the administering department from the General Contractor, to be assessed by the General Contractor as a back charge against the Subcontractor, of 1/10 of 1% of the sub-contract price, or \$1,200 whichever sum is greater, in the nature of liquidated damages, for each week that such party fails or refuses to comply
  - (b) The suspension of any payment of part thereof due under the contract until such time as the General Contractor or any Subcontractor is able to demonstrate his compliance with the terms of the contract;
  - (c) The termination, or cancellation, of the contract, in whole or in part, unless the General Contractor or any Subcontractor is able to demonstrate within a specified time his/her compliance with the terms of the City's affirmative action construction contract requirements; OR,
  - (d) The denial to the General Contractor or any Subcontractor of the right to participate in any future contracts awarded by the administering department for a period of up to three years.
3. If at any time after the imposition of one or more of the above sanctions (unless the contract. has been terminated), a Contractor is able to demonstrate that he/she is in compliance with this section, he/she may request the City to suspend the sanctions conditionally pending a final determination by the City as to whether the Contractor is in compliance. Upon final determination of the City, the administrating department, based upon the recommendation of the City, shall either lift the sanctions or continue them.
4. Sanctions enumerated under Section XV shall not: be imposed by the City except after the General Contractor or Subcontractor have had an opportunity for full and fair hearing with City. The non-compliance investigation shall be initiated without prior notice to the contractor. Any sanctions to be imposed shall be, set forth fully and completely in writing, and may then be appealed to the City in writing by the Contractor.

**.XIV. Severability**

The provisions of this section are severable, and if any of these provisions shall be held unconstitutional by any court of competent jurisdiction, the decision of such court. shall not, affect or impair any of the remaining provisions.



# FAIR EMPLOYMENT LAW

The Fair Employment Law declares that it is illegal to discriminate on the basis of race, color, religious creed, national origin, sex, sexual orientation, age, ancestry or disability

## IT IS UNLAWFUL:

- to print or circulate any advertisement or use any application form which directly or indirectly specifies any limitation on the basis of race, color, religious creed, national origin, sex, sexual orientation, age, ancestry or disability.
- to discharge or refuse to hire any individual on file basis of their race, color, religious creed, national origin, sex, sexual orientation, age, ancestry, or disability.
- to discriminate against any individual in matters relating to compensation, terms, conditions, or privileges of employment because of their race, color, religious creed, national origin, sex, sexual orientation, age, ancestry or disability.
- to require a woman to leave her job at some arbitrary stage in her pregnancy or to refuse to let her return to work until a specified time set by the employer.
- to grant a female employee at least eight weeks leave for purposes of childbirth or to treat her absence differently than any other absence due to disability.
- to require an employee to remain at work during any day or part thereof that s/he observes as a religious holiday provided that the employee gives a ten-day notice and the absence does not cause undue hardship to the employer.
- to discharge or refuse to hire any person because of their failure to furnish information concerning admission to a center for the treatment of mentally ill persons.
- to discriminate against a job applicant for failure to furnish information, written or oral, concerning:- A) an arrest, detention or disposition regarding a violation of law in which no conviction resulted; B) a first conviction for any of the following misdemeanors: driving under the influence, simple assault, speeding, minor traffic violations, disturbance of the peace; or C) conviction for a misdemeanor where the date of the conviction or end of period of incarceration, if any, occurred more than five years prior to the employment application, and the applicant has not been convicted of any offense within the five years immediately before the date of application.

## RETALIATION

It is illegal to retaliate against any person because s/he has opposed any practices forbidden under this Chapter or because s/he has filed a complaint, testified, or assisted in any proceeding before the Commission. It is also illegal to aid, abet, incite, compel or coerce the doings of any of the acts forbidden under this Chapter or to attempt to do so.

## SEXUAL HARASSMENT

**151B:1,18 The term "sexual harassment" shall mean sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature when (a) submission to or rejection of such advances, requests or conduct is made either explicitly or implicitly a term or condition of employment, or as a basis for employment decisions: (h) such advances,, requests or conduct have the purpose or effect of unreasonably interfering with an individual's work performance by creating an intimidating, hostile, humiliating or sexually offensive work environment.**

## COMPLAINTS

All complaints must be filed in writing. Information on the filing of complaints can be obtained by contacting the MASSACHUSETTS COMMISSION AGAINST DISCRIMINATION at the following locations:

Boston office:  
One Ashburton Place  
Room 601  
Boston, MA 02108  
(617) 727-3990

Springfield office:  
436 Dwight Street  
Suite 315  
Springfield, MA 01103  
(413) 739-2145

THE MASSACHUSETTS COMMISSION AGAINST DISCRIMINATION

## Attachment B

### CITY OF NEWTON

#### Contractors Certification

A Contractor will not be eligible for award of a contract, unless such contractor has submitted the following certification, which is deemed a part of the resulting contract.

#### CONTRACTOR'S CERTIFICATION

\_\_\_\_\_. Certifies that:  
Contractor's Name

it tends to use the following listed construction trades in the work under the contract

\_\_\_\_\_ and

2. will comply with the minority manpower ration and specific affirmative action steps contained herein; and
3. will obtain from each of its subcontractors and submit to the contracting or administering agency prior to the award of any subcontract under this contract the subcontractor certification required by these bid conditions

\_\_\_\_\_  
(Signature of authorized representative of Contractor)

Any contract for the provision of goods or services to the City of Newton or any of its departments is subject to the ordinance creating the Human Rights Commission, as it may be amended from Time to Time. Any complaints within the purview shall be forwarded immediately to the contracting agency, and a copy shall be sent to the Human Rights Commission; any complaints received by the contracting agency shall be forwarded to the contractor, and a copy shall be sent to the Human Rights Commission.



## Attachment C

### CITY OF NEWTON

#### Subcontractors Certification

Prior to the award of any subcontract , regardless of tier, the prospective subcontractor must execute and submit to the Prime Contractor the following certification, which will be deemed a part of the resulting subcontractor.

#### SUBCONTRACTOR`S CERTIFICATION

\_\_\_\_\_  
Contractor's Name

\_\_\_\_\_ Certifies that:

it tends to use the following listed construction trades in the work under the contract

\_\_\_\_\_ and

will comply with the minority manpower ration and specific affirmative action steps contained herein; and

will obtain from each of its subcontractors and submit to the contracting or administering agency prior to the award of any subcontract under this contract the subcontractor certification required by these bid conditions

Pursuant to M.G.L. Ch. 62C, Sec. 49A, I certify under the penalties of perjury that, to the best of my knowledge and belief, I am in compliance with all laws of the Commonwealth relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

\_\_\_\_\_  
(Signature of authorized representative of Contractor)

In order to ensure that the said subcontractor's certification becomes part of all subcontracts under the prime contract, no subcontract shall be executed until an authorizee representative of the Administrative Agency administering this project has determined in writing, that the said certification has been incorporated in such subcontract, regardless of tier, Any subcontract executed without such written approval shall be void.

Any contract for the provision of goods or services to the City of Newton or any of its departments is subject to the ordinance creating the Human Rights Commission, as it may be amended from Time to Time. Any complaints within the purview shall be forwarded immediately to the contracting agency, and a copy shall be sent to the Human Rights Commission; any complaints received by the contracting agency shall be forwarded to the contractor, and a copy shall be sent to the Human Rights Commission.

## **CITY OF NEWTON**

### **WAGE RATE REQUIREMENTS**

#### **1. GENERAL**

- A.** This section summarizes the requirements for the payment of wages to laborers and mechanics employed under the Contract.
- B.** Other duties and requirements of law which may not be specified in this section apply and are inherently a part of the Contract.

#### **2. WAGE RATES**

- A.** The rate per hour to be paid to mechanics, apprentices, teamsters, chauffeurs, and laborers employed on the Work shall not be less than the rate of wages in the attached "Minimum Wage Rates" as determined by the Commissioner of Labor and Industries. The schedule of prevailing wage rates will be updated annually for all public construction projects lasting longer than one (1) year. The contractor shall pay the prevailing wage rate set out in the applicable prevailing wage rate schedule. Increases in prevailing wage rates shall not be the basis for a change order.
- B.** Keep posted on the site a legible copy of said schedule. Keep on file the wage rates and classifications of labor employed on this Work in order that they may be available for inspection by the Owner, Administrator, or the Architect.
- C.** Apprentices employed pursuant to this determination of wage rates must be registered and approved by the State Apprenticeship Council wherever rates for journeymen or apprentices are not listed.
- D.** Pay reserve police officers employed on the Work the prevailing rate of wages paid to regular police officers as required by M.G.L. c149, Sec. 34B, as amended. Such police officers shall be covered by Workmen's Compensation Insurance and Employers Liability Insurance by the Contractor.
- E.** The Contractor and all subcontractors shall, on a weekly basis throughout the term of the contract, provide to the City of Newton certified payroll affidavits verifying compliance with M.G.L. c.149, Sec. 27, 27A and 27B.
- F.** The Contractor and all subcontractors shall provide a Statement of Compliance within 15 days of the completion of its portion of the work. This statement shall be submitted to the Owner on the form found elsewhere in this section.
- G.** The Contractor shall maintain accurate and complete records, including payroll records, during the Contract term and for three years thereafter.

**END OF SECTION**



DEVAL L. PAIRICK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification	Effective Dates and Total Rates								
Construction									
(2 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45,530	06/01/2011	\$46,280	12/01/2011	\$46,940			
	06/01/2012	\$47,590	12/01/2012	\$48,620					
(3 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45,600	06/01/2011	\$46,350	12/01/2011	\$47,010			
	06/01/2012	\$47,660	12/01/2012	\$48,690					
(4 & 5 AXLE) DRIVER - EQUIPMENT	12/01/2010	\$45,720	06/01/2011	\$46,470	12/01/2011	\$47,130			
	06/01/2012	\$47,780	12/01/2012	\$48,810					
AD/SUBMERSIBLE PILOT	08/01/2010	\$103,680	08/01/2011	\$107,800					
AIR TRACK OPERATOR	12/01/2010	\$49,850	06/01/2011	\$50,850	12/01/2011	\$52,100			
ASBESTOS REMOVER - PIPE/MECH. EQUIPT.	12/01/2009	\$40,250							
ASPHALT RAKER	12/01/2010	\$49,350	06/01/2011	\$50,350	12/01/2011	\$51,600			
ASPHALT/CONCRETE CRUSHER PLANT-ON SITE	12/01/2010	\$60,980							
BACKHOE/FRONT-END LOADER	12/01/2010	\$60,980							
BARCO-TYPE JUMPING TAMPER	12/01/2010	\$49,350	06/01/2011	\$50,350	12/01/2011	\$51,600			
BLOCK PAVER, RAMMER / CURB SETTER	12/01/2010	\$49,850	06/01/2011	\$50,850	12/01/2011	\$52,100			
BOILER MAKER	01/01/2010	\$55,850							
APPRENTICE: BOILERMAKER - Local 29									
Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	65.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00
Apprentice wages shall be no less than the following:									
Step 154264/254264854434854433054831455020/2552086853397									
BRICK/STONE/ARTIFICIAL MASONRY (INCL. MASONRY WATERPROOFING)	03/01/2011	\$70,900	08/01/2011	\$73,000	02/01/2012	\$73,990			
APPRENTICE: BRICK/PLASTER/CEMENT MASON - Local 13 Newton									
Ratio	Step	1	2	3	4	5			
1:5	%	50.00	60.00	70.00	80.00	90.00			
Apprentice wages shall be no less than the following:									
Step 154830/255282853734854184054438									
BULLDOZER/GRADER/SCRAPER	12/01/2010	\$60,630							
CAISSON & UNDERPINNING BOTTOM MAN	12/01/2010	\$50,250	06/01/2011	\$51,250	12/01/2011	\$52,500			
CAISSON & UNDERPINNING LABORER	12/01/2010	\$49,100	06/01/2011	\$50,100	12/01/2011	\$51,350			
CAISSON & UNDERPINNING TOP MAN	12/01/2010	\$49,100	06/01/2011	\$50,100	12/01/2011	\$51,350			
CARBIDE CORE DRILL OPERATOR	12/01/2010	\$49,350	06/01/2011	\$50,350	12/01/2011	\$51,600			
CARPENTER	03/01/2011	\$56,230	09/01/2011	\$57,360	03/01/2012	\$58,480			
APPRENTICE: CARPENTER - Zone 2 Eastern MA									
Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	50.00	60.00	70.00	75.00	80.00	80.00	90.00	90.00
Apprentice wages shall be no less than the following:									
Step 152427/252947854191854351054468054468055144685087									

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. LOWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification	Effective Dates and Total Rates							
CEMENT MASONRY/PLASTERING	02/01/2011	\$69.070	08/01/2011	\$70.770	02/01/2012	\$71.540		
CHAINSAW OPERATOR	12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600		
CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES	12/01/2010	\$61.980						
COMPRESSOR OPERATOR	12/01/2010	\$49.690						
DELEADER (BRIDGE)	01/01/2011	\$64.410	07/01/2011	\$65.410	01/01/2012	\$66.410		
	07/01/2012	\$67.410	01/01/2013	\$68.410				
APPRENTICE: PAINTER, Local 33 - BRIDGES/TANKS								
Ratio	Step	1	2	3	4	5	6	7
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00
Apprentice wages shall be no less than the following:								
Step 1 \$29.31/2534.84 \$39.014 \$41.140 \$51.514 \$63.647 \$75.581 \$86.40 11								
DEMO: ADZEMAN	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350		
DEMO: BACKHOE/LOADER/HAMMER OPERATOR	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350		
APPRENTICE: LABORER, Demo Backhoe/Loader/Hammer Operator								
Ratio	Step	1	2	3	4			
1:5	%	60.00	70.00	80.00	90.00			
Apprentice wages shall be no less than the following:								
Step 1 \$37.48/2540.44 \$43.794 \$44.95								
DEMO: BURNERS	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100		
APPRENTICE: LABORER, Demo Burners								
Ratio	Step	1	2	3	4			
1:5	%	60.00	70.00	80.00	90.00			
Apprentice Wages shall be no less than the following:								
Step 1 \$37.33/2540.44 \$43.594 \$44.72								
DEMO: CONCRETE CUTTER/SAWYER	12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350		
DEMO: JACKHAMMER OPERATOR	12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011	\$52.100		
DEMO: WRECKING LABORER	12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.350		
APPRENTICE: LABORER, Demo Wrecking Laborer								
Ratio	Step	1	2	3	4			
1:5	%	60.00	70.00	80.00	90.00			
Apprentice wages shall be no less than the following:								
Step 1 \$34.88/2539.94 \$42.994 \$44.05								
DIRECTIONAL DRILL MACHINE OPERATOR	12/01/2010	\$60.630						
DIVER	08/01/2010	\$77.520	08/01/2011	\$80.270				
DIVER TENDER	08/01/2010	\$62.570	08/01/2011	\$65.320				
DIVER TENDER (EFFLUENT)	08/01/2010	\$81.250	08/01/2011	\$85.380				
DIVER/SLURRY (EFFLUENT)	08/01/2010	\$103.680	08/01/2011	\$107.800				
ELECTRICIAN	03/01/2011	\$68.290						

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Division of Labor  
HEATHER E. LOWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification	Effective Dates and Total Rates										
APPRENTICE: ELECTRICIAN - Local 103											
Ratio	Step	1	2	3	4	5	6	7	8	9	10
23***	%	40.00	40.00	43.00	43.00	50.00	53.00	60.00	63.00	70.00	75.00
Apprentice wages shall be no less than the following Steps:						App Prior 1A.03; 30.03A.04.5.00.03.45.70/75.00					
15373.8253738.0544.81.8544.81/354.4.95/449.08/75.11.22/88.33.33.69533.4900.537.42						01/01/2011	\$66.690	01/01/2012	\$68.190		
ELEVATOR CONSTRUCTOR											
APPRENTICE: ELEVATOR CONSTRUCTOR - Local 4											
Ratio	Step	1	2	3	4	5					
11	%	50.00	55.00	63.00	70.00	80.00					
Apprentice rates shall be no less than the following:						Steps 1-2 are 6 mos; Steps 3-5 are 1 year					
Step 1534.24/2543.748.548.864.531.41.05.54.30											
ELEVATOR CONSTRUCTOR HELPER						01/01/2011	\$52.830	01/01/2012	\$54.330		
FENCE & GUARD RAIL ERECTOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
FIELD ENG. - INST. PERSON (BLDG, SITE, HVY CONST)						11/01/2010	\$38.140	05/01/2011	\$39.380		
FIELD ENG. - ROD PERSON (BLDG, SITE, HVY CONST)						11/01/2010	\$42.200	05/01/2011	\$42.930		
FIELD ENG. - CHIEF OF PARTY (BLDG, SITE, HVY CONST)						11/01/2010	\$39.520	05/01/2011	\$60.770		
FIRE ALARM INSTALLER						03/01/2011	\$68.290				
FIRE ALARM REPAIR / MAINTENANCE						03/01/2011	\$56.300				
FIREMAN (ASST. ENGINEER)						12/01/2010	\$54.840				
FLAGGER & SIGNALER						12/01/2010	\$38.050	06/01/2011	\$39.050	12/01/2011	\$39.050
FLOORCOVERER						03/01/2011	\$61.110	09/01/2011	\$62.360	03/01/2012	\$63.610
APPRENTICE: FLOORCOVERER - Local 2148 Zone 1											
Ratio	Step	1	2	3	4	5	6	7	8		
11	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00		
Apprentice rates shall be no less than the following:						Steps are 750 hrs.					
Step 152838/2530.178.541.414.543.20.0544.78/44.8.57/75.21.5.68/33.93											
FORK LIFT/CHERRY PICKER						12/01/2010	\$60.980				
GENERATOR/LIGHTING PLANT/HEATERS						12/01/2010	\$49.690				
GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)						01/01/2011	\$53.910	07/01/2011	\$54.910	01/01/2012	\$55.910
						07/01/2012	\$56.910	01/01/2013	\$57.910		
APPRENTICE: GLAZIER - Local 33 Zone 2											
Ratio	Step	1	2	3	4	5	6	7	8		
11	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:						Steps are 750 hrs.					
Step 1524.04/2531.088.532.714.534.33.0544.14/44.3.78/784.741.68/30.44											
HOISTING ENGINEER/Cranes/GRADALLS						12/01/2010	\$60.980				

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Deputy Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
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JOANNE F. GOLDSSTEIN  
Secretary of Labor and Workforce Development  
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Director of Labor  
HEATHER E. LOWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification	Effective Dates and Total Rates									
APPRENTICE: BOILER/PORT. ENG. - Local 4										
Ratio	Step	1	2	3	4	5	6	7	8	
1:4	%	55.00	60.00	65.00	70.00	75.00	80.00	85.00	90.00	
Apprentice wages shall be no less than the following:										
Step 1\$31.33/\$34.54/\$37.84/\$41.14/\$44.35/\$47.55/\$50.85/\$54.08/\$57.10										
HVAC (DUCTWORK)						02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012 \$67.670
						08/01/2012	\$68.920	02/01/2013	\$70.170	
HVAC (ELECTRICAL CONTROLS)						03/01/2011	\$68.290			
HVAC (TESTING AND BALANCING - AIR)						02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012 \$67.670
						08/01/2012	\$68.920	02/01/2013	\$70.170	
HVAC (TESTING AND BALANCING - WATER)						09/01/2010	\$68.730			
HVAC MECHANIC						09/01/2010	\$68.730			
HYDRAULIC DRILLS						12/01/2010	\$49.850	06/01/2011	\$50.850	12/01/2011 \$52.100
INSULATOR (PIPES & TANKS)						09/01/2010	\$61.660			
APPRENTICE: ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston										
Ratio	Step	1	2	3	4					
1:4	%	50.00	60.00	70.00	80.00					
Apprentice wages shall be no less than the following:										
Step 1\$37.34/\$42.20/\$47.07/\$51.93										
IRONWORKER/WEELDER						03/16/2010	\$60.940			
APPRENTICE: IRONWORKER - Local 7 Boston										
Ratio	Step	1	2	3	4	5	6			
**	%	60.00	70.00	75.00	80.00	85.00	90.00			
Apprentice wages shall be no less than the following:										
Step 1\$44.82/\$50.35/\$55.12/\$60.88/\$66.55/\$72.41										
JACKHAMMER & PAVING BREAKER OPERATOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011 \$51.600
LABORER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350
APPRENTICE: LABORER - Zone 1										
Ratio	Step	1	2	3	4					
1:5	%	60.00	70.00	80.00	90.00					
Apprentice wages shall be no less than the following:										
Step 1\$34.88/\$39.94/\$42.99/\$46.05										
LABORER: CARPENTER TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350
LABORER: CEMENT FINISHER TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350
LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350
LABORER: MASON TENDER						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011 \$51.600
LABORER: MULTI-TRADE TENDER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350
LABORER: TREE REMOVER						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011 \$51.350

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Commissioner

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Division of Labor  
HEATHER E. LOWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification

Effective Dates and Total Rates

This classification applies to the wholesale removal

of standing trees including all associated trimming of branches and limbs, and applies to the removal of branches at locations not on or around utility lines.

LASER BEAM OPERATOR	12/01/2010	\$49,350	06/01/2011	\$50,350	12/01/2011	\$51,600
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MARBLE & TILE FINISHERS	03/01/2011	\$39,270	08/01/2011	\$60,950	02/01/2012	\$61,740
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APPRENTICE: MARBLE & TILE FINISHER - Local 3 Marble & Tile

Ratio	Step	1	2	3	4	5
1:3	%	50.00	60.00	70.00	80.00	90.00

Apprentice wages shall be no less than the following:

Steps are 800 hrs.

Step 1 \$41,968/254,543.0 \$48,894 \$52,350 \$55.81

MARBLE MASONS, TILELAYERS & TERRAZZO MECH	03/01/2011	\$70,940	08/01/2011	\$73,040	02/01/2012	\$74,030
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APPRENTICE: MARBLE TILE-TERRAZZO MECHANIC - Local 3 Marble & Tile

Ratio	Step	1	2	3	4	5
1:3	%	50.00	60.00	70.00	80.00	90.00

Apprentice wages shall be no less than the following:

Step 1 \$48,332/253,284.0 \$57,374 \$61,890 \$64.42

MECH. SWEEPER OPERATOR (NON CONSTRUCTION)	07/01/2010	\$29,590	07/01/2011	\$30,290
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MECH. SWEEPER OPERATOR (ON CONST. SITES)	12/01/2010	\$60,630
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MECHANICS MAINTENANCE	12/01/2010	\$60,630
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MILLWRIGHT (Zone 1)	10/01/2010	\$56,720
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APPRENTICE: MILLWRIGHT - Local 1121 Zone 1

Ratio	Step	1	2	3	4	5	6	7	8
1:5	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	85.00

Apprentice wages shall be no less than the following:

Step 1 \$34,247/253,791.0 \$41,074 \$42,750 \$45,174 \$46,830 \$49,276 \$50.94

MORTAR MIXER	12/01/2010	\$49,350	06/01/2011	\$50,350	12/01/2011	\$51,600
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OILER (OTHER THAN TRUCK CRANES, GRADALLS)	12/01/2010	\$43,170
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OILER (TRUCK CRANES, GRADALLS)	12/01/2010	\$46,330
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OTHER POWER DRIVEN EQUIPMENT - CLASS II	12/01/2010	\$60,630
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PAINTER (BRIDGES/TANKS)	01/01/2011	\$64,410	07/01/2011	\$65,410	01/01/2012	\$66,410
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	07/01/2012	\$67,410	01/01/2013	\$68,410
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APPRENTICE: PAINTER, Local 35 - BRIDGES/TANKS

Ratio	Step	1	2	3	4	5	6	7	8
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00

Apprentice wages shall be no less than the following:

Steps are 750 hrs.

Step 1 \$29,311/253,484.0 \$39,014 \$41,140 \$43.51 \$45,833 \$47,959 \$50.11

PAINTER (SPRAY OR SANDBLAST, NEW) *	01/01/2011	\$55,310	07/01/2011	\$56,310	01/01/2012	\$57,310
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	07/01/2012	\$58,310	01/01/2013	\$59,310
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\* If 30% or more of surfaces to be painted are new construction,

NEW paint rate shall be used.

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel: 617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PAILEK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDFSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification

Effective Dates and Total Rates

APPRENTICE: PAINTER Local35 Zone 2 - Spray/Sandblast - New											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1524.74/2531.83/333.55/433.24/543.14/654.68/794.83/651.92											
PAINTER (SPRAY OR SANDBLAST, REPAINT)						01/01/2011	\$53.370	07/01/2011	\$54.370	01/01/2012	\$55.370
						07/01/2012	\$56.370	01/01/2013	\$57.370		
APPRENTICE: PAINTER Local35 Zone 2 - Spray/Sandblast - Repaint											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1523.79/2530.78/332.38/433.98/543.78/654.53/6794.98/650.17											
PAINTER (TRAFFIC MARKINGS)						12/01/2010	\$49.100	06/01/2011	\$50.100	12/01/2011	\$51.300
PAINTER / TAPER (BRUSH, NEW) *						01/01/2011	\$53.910	07/01/2011	\$54.910	01/01/2012	\$55.910
* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used.						07/01/2012	\$56.910	01/01/2013	\$57.910		
APPRENTICE: PAINTER - Local35 Zone 2 - BRUSH NEW											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1524.04/2531.08/332.71/434.33/544.14/654.57/6794.741/650.16											
PAINTER / TAPER (BRUSH, REPAINT)						01/01/2011	\$51.970	07/01/2011	\$52.970	01/01/2012	\$53.970
						07/01/2012	\$54.970	01/01/2013	\$55.970		
APPRENTICE: PAINTER Local35 Zone 2 - BRUSH REPAINT											
Ratio	Step	1	2	3	4	5	6	7	8		
1:1	%	50.00	55.00	60.00	65.00	70.00	75.00	80.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1523.09/2530.01/331.54/433.07/542.80/654.33/794.58/654.91											
PANEL & PICKUP TRUCKS DRIVER						12/01/2010	\$45.360	06/01/2011	\$46.110	12/01/2011	\$46.770
						06/01/2012	\$47.420	12/01/2012	\$48.450		
PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)						08/01/2010	\$62.570	08/01/2011	\$65.320		
PILE DRIVER						08/01/2010	\$62.570	08/01/2011	\$65.320		
APPRENTICE: PILE DRIVER - Local35 Zone 1											
Ratio	Step	1	2	3	4	5	6	7	8		
1:3	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00	95.00		
Apprentice wages shall be no less than the following:											
Step 1547.42/2549.49/331.34/433.23/545.10/655.94/755.88/6540.70											
PIPEFITTER & STEAMFITTER						09/01/2010	\$68.730				

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Issue Date: 03/10/2011

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DEVAL L. PATRICK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. LOWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification

Effective Dates and Total Rates

APPRENTICE: PIPEFITTER - Local 337											
Ratio	Step	1	2	3	4	5					
**	%	40.00	45.00	60.00	70.00	80.00					
Apprentice Rate - Step 1 \$33.44 / 2nd \$38.05 / 3rd \$43.90 / 4th \$54.90 / 5th \$59.51						** 1.3; 3.1.5; 1.10 thereafter / Step and 1 yr.					
Rating % C Mechanic: ** 1.1; 1.2; 2.4; 3.4; 4.8; 5.10; 6.12; 7.14; 8.17; 9.20; 10.23 (Max)											
PIPELAYER						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
PLUMBERS & GASFITTERS						03/01/2011	\$67.500	09/01/2011	\$68.250	03/01/2012	\$69.030
						09/01/2012	\$70.300	03/01/2013	\$71.550		
APPRENTICE: PLUMBER - Local 12											
Ratio	Step	1	2	3	4	5					
**	%	35.00	40.00	55.00	65.00	75.00					
Apprentice wages shall be no less than the following:						** 1.2; 2.4; 3.10; 4.14; 5.19 / Step and 1 yr.					
Step 1 \$30.01 / 2nd \$32.89 / 3rd \$41.54 / 4th \$47.31 / 5th \$50.20 / 6th \$53.09 / 7th \$55.98											
PNEUMATIC CONTROLS (TEMP.)						09/01/2010	\$68.730				
PNEUMATIC DRILL/TOOL OPERATOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
POWDERMAN & BLASTER						12/01/2010	\$50.100	06/01/2011	\$51.100	12/01/2011	\$52.350
POWER SHOVEL/DERRICK/TRENCHING MACHINE						12/01/2010	\$60.980				
PUMP OPERATOR (CONCRETE)						12/01/2010	\$60.980				
PUMP OPERATOR (DEWATERING, OTHER)						12/01/2010	\$49.690				
READY-MIX CONCRETE DRIVER						05/01/2010	\$41.080	05/01/2011	\$41.690		
RECLAIMERS						12/01/2010	\$60.630				
RESIDENTIAL WOOD FRAME CARPENTER **						04/01/2009	\$35.620				
** The Residential Wood Frame Carpenter classification applies only to the construction of new, wood-frame residences that do not exceed four stories including the basement.											
As of 9/1/09 Carpentry work on wood-frame residential WEATHERIZATION projects shall be paid the RESIDENTIAL WOOD FRAME CARPENTER rate.											
APPRENTICE: CARPENTER (Residential Wood Frame) - Zone 2											
Ratio	Step	1	2	3	4	5	6	7	8		
1.5	%	40.00	40.00	45.00	70.00	75.00	80.00	85.00	90.00		
Apprentice wages shall be no less than the following:											
Step 1 \$20.13 / 2nd \$24.04 / 3rd \$27.23 / 4th \$28.43 / 5th \$29.63 / 6th \$30.83 / 7th \$32.03 / 8th \$33.22											
RIDE-ON MOTORIZED BUGGY OPERATOR						12/01/2010	\$49.350	06/01/2011	\$50.350	12/01/2011	\$51.600
ROLLER/SPREADER/MULCHING MACHINE						12/01/2010	\$60.630				
ROOFER (Inc. Roofer Waterproofing & Roofer Dampproofg)						02/01/2011	\$54.860	08/01/2011	\$55.860	02/01/2012	\$56.860
						08/01/2012	\$57.860	02/01/2013	\$58.860		
APPRENTICE: ROOFER - Local 33											
Ratio	Step	1	2	3	4	5					
**	%	50.00	60.00	65.00	75.00	85.00					
** 1.5; 2.4-10, then 1.10; Rate of 1.4, then 1.1						Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.					
Apprentice rates no less than: Step 1 \$30.41 / 2nd \$40.44 / 3rd \$42.41 / 4th \$45.97 / 5th \$49.53											

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DEVAL L. PAILEK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification	Effective Dates and Total Rates					
ROOFER SLATE/TILE/PRECAST CONCRETE	02/01/2011	\$55.110	08/01/2011	\$56.110	02/01/2012	\$57.110
	08/01/2012	\$58.110	02/01/2013	\$59.110		
APPRENTICE: ROOFER (Slate/Tile/Precast Concrete) - Local 33						
Ratio Step	1	2	3	4	5	
** %	50.00	60.00	65.00	75.00	85.00	
Apprentice wages shall be paid no less than the following:						
Step 1 \$30.34/2540.796 \$42.384 \$44.145 \$49.74						
SHEETMETAL WORKER	02/01/2011	\$65.170	08/01/2011	\$66.420	02/01/2012	\$67.670
	08/01/2012	\$68.920	02/01/2013	\$70.170		
APPRENTICE: SHEET METAL WORKER - Local 17-A						
Ratio Step	1	2	3	4	5	6
14 %	40.00	45.00	50.00	60.00	65.00	75.00
Apprentice wages shall be no less than the following:						
Step 1 \$28.84/2534.490 \$37.384 \$42.380 \$45.01/4530.277 \$53.03						
Step 1-3 am 1 year; Step 4-7 am 4 mos.						
SIGN ERECTOR	06/01/2009	\$37.780				
APPRENTICE: SIGN ERECTOR - Local 33 Zone 2						
Ratio Step	1	2	3	4	5	6
11 %	50.00	55.00	60.00	65.00	70.00	75.00
Apprentice wages shall be no less than the following:						
Step am 4 mos.						
Step 1 \$19.48/2523.120 \$24.344 \$25.405 \$30.344 \$31.587 \$32.826 \$34.046 \$35.30						
SPECIALIZED EARTH MOVING EQUIP < 35 TONS	12/01/2010	\$45.820	06/01/2011	\$46.570	12/01/2011	\$47.230
	06/01/2012	\$47.880	12/01/2012	\$48.910		
SPECIALIZED EARTH MOVING EQUIP > 35 TONS	12/01/2010	\$46.110	06/01/2011	\$46.860	12/01/2011	\$47.520
	06/01/2012	\$48.170	12/01/2012	\$49.200		
SPRINKLER FITTER	01/01/2011	\$70.550	09/01/2011	\$71.350	01/01/2012	\$71.500
	03/01/2012	\$72.250	09/01/2012	\$73.250	01/01/2013	\$73.400
	03/01/2013	\$74.400				
APPRENTICE: SPRINKLER FITTER - Local 330						
Ratio Step	1	2	3	4	5	6
11 %	40.00	45.00	50.00	55.00	60.00	65.00
Apprentice wages shall be no less than the following/step:						
Step 1 \$20.25/38.73 \$34.130 \$43.83/554440/4848.95/7531.50/8834.05/9354.40/10359.15						
STEAM BOILER OPERATOR	12/01/2010	\$60.630				
TAMPERS, SELF-PROPELLED OR TRACTOR DRAWN	12/01/2010	\$60.630				
TELECOMMUNICATION TECHNICIAN	03/01/2011	\$56.300				

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THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification

Effective Dates and Total Rates

APPRENTICE: TELECOMMUNICATION TECHNICIAN - Local103									
Ratio	Step	1	2	3	4	5	6	7	8
1:1	%	40.00	45.00	50.00	55.00	60.00	65.00	70.00	80.00
Apprentice wages shall be no less than the following:									
Step 1537.09/2538.49/3440.30/441.89/543.49/644.51/744.83/849.90									
TERRAZZO FINISHERS						03/01/2011	\$69.840	08/01/2011	\$71.940
APPRENTICE: TERRAZZO FINISHER - Local3 Marble & Tile									
Ratio	Step	1	2	3	4	5			
1:3	%	50.00	60.00	70.00	80.00	90.00			
Apprentice wages shall be no less than the following:									
Step 1547.77/2532.18/3534.40/4541.01/5543.43									
TEST BORING DRILLER						12/01/2010	\$50.500	06/01/2011	\$51.500
TEST BORING DRILLER HELPER						12/01/2010	\$49.220	06/01/2011	\$50.220
TEST BORING LABORER						12/01/2010	\$49.100	06/01/2011	\$50.100
TRACTORS/PORTABLE STEAM GENERATORS						12/01/2010	\$60.630		
TRAILERS FOR EARTH MOVING EQUIPMENT						12/01/2010	\$46.400	06/01/2011	\$47.150
						06/01/2012	\$48.460	12/01/2012	\$49.490
TUNNEL WORK - COMPRESSED AIR						12/01/2010	\$61.680	06/01/2011	\$62.930
TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE)						12/01/2010	\$63.680	06/01/2011	\$64.930
TUNNEL WORK - FREE AIR						12/01/2010	\$53.750	06/01/2011	\$55.000
TUNNEL WORK - FREE AIR (HAZ. WASTE)						12/01/2010	\$55.750	06/01/2011	\$57.000
VAC-HAUL						12/01/2010	\$45.820	06/01/2011	\$46.570
						06/01/2012	\$47.880	12/01/2012	\$48.910
WAGON DRILL OPERATOR						12/01/2010	\$49.350	06/01/2011	\$50.350
WASTE WATER PUMP OPERATOR						12/01/2010	\$60.980		
WATER METER INSTALLER						03/01/2011	\$67.500	09/01/2011	\$68.250
						09/01/2012	\$70.300	03/01/2013	\$71.550
Outside Electrical - East									
CABLE TECHNICIAN (Power Zone)						08/30/2010	\$34.050	08/29/2011	\$35.310
CABLEMAN (Underground Ducts & Cables)						08/30/2010	\$44.320	08/29/2011	\$46.110
DRIVER / GROUNDMAN CDL						08/30/2010	\$39.360	08/29/2011	\$40.830
DRIVER / GROUNDMAN - Inexperienced (<2000 Hrs)						08/30/2010	\$31.890	08/29/2011	\$33.050
EQUIPMENT OPERATOR (Class A CDL)						08/30/2010	\$48.320	08/29/2011	\$50.110
EQUIPMENT OPERATOR (Class B CDL)						08/30/2010	\$41.760	08/29/2011	\$43.340
GROUNDMAN						08/30/2010	\$31.390	08/29/2011	\$32.550
GROUNDMAN - Inexperienced (<2000 Hrs.)						08/30/2010	\$26.840	08/29/2011	\$27.790
TOURNEYMAN LINEMAN						08/30/2010	\$57.510	08/29/2011	\$59.620

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:

617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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DEVAL L. PAILEK  
Governor  
TIMOTHY P. MURRAY  
Lieutenant Governor

THE COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF LABOR AND WORKFORCE DEVELOPMENT  
DIVISION OF OCCUPATIONAL SAFETY

Prevailing Wage Rates

As determined by the Commissioner under the provisions of the  
Massachusetts General Laws, Chapter 149, Sections 26 to 27H



JOANNE F. GOLDSTEIN  
Secretary of Labor and Workforce Development  
GEORGE E. NOEL  
Director of Labor  
HEATHER E. ROWE  
Acting Commissioner of  
Division of Occupational Safety

Awarding Authority: City of Newton

Contract Number: 11-72

City/Town: NEWTON

Description of Work: Woodland Road Reconstruction - A Scenic Roadway

Job Location: Woodland Road

Classification

Effective Dates and Total Rates

APPRENTICE: LINEMAN (Outside Electrical)- East Local 104								
Ratio	Step	1	2	3	4	5	6	7
1:2	%	60.00	65.00	70.00	75.00	80.00	85.00	90.00
Apprentice wages shall be no less than the following:								
Step 1534.39/2534.99/3439.43/4442.30/544.95/647.41/7350.74								
TELEDATA CABLE SPLICER					03/01/2007	\$27.330		
TELEDATA LINEMAN/EQUIPMENT OPERATOR					03/01/2007	\$27.330		
TELEDATA WIREMAN/INSTALLER/TECHNICIAN					03/01/2007	\$27.330		
TREE TRIMMER					02/01/2009	\$19.010		
This classification applies only to the trimming of branches on and around utility lines.								
TREE TRIMMER GROUNDMAN					02/01/2009	\$17.060		
This classification applies only to the trimming of branches on and around utility lines.								

Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, Section 11.

All steps are six months (1000 hours) unless otherwise specified.

- \* Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof.
- \*\* Multiple ratios are listed in the comment field.
- \*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1 JM: 1 APP; 2-3 JM: 2 APP; 4-6 JM: 4 APP; 7-9 JM: 6 APP; 10-12 JM: 8 APP; 13-15 JM: 10 APP; etc.
- \*\*\*\* The job site ratio of 2 apprentices (APP) for every 3 journeymen (JM) is allowed as follows:  
1-2 JM: 1 APP; 3-4 JM: 2 APP; 5 JM: 3 APP; 6-7 JM: 4 APP; 8 JM: 5 APP; etc.

This wage schedule must be posted at the worksite in accordance with M.G.L. c. 149, § 27. Failure of the employer to pay "prevailing wage rates," which are the minimum wage rates listed above, on public works projects is a violation of M.G.L. c. 149, § 27. Employees not receiving such rates should report the violation to the Fair Labor Division of the Office of the Attorney General, 100 Cambridge Street, Boston, MA 02108; Tel:

617-727-3465. Contractors with questions about the wage rates or classifications included on the wage schedules have an affirmative obligation to inquire with DOS at [www.mass.gov/dos/pw](http://www.mass.gov/dos/pw) or at 617-626-6952.

Issue Date: 03/10/2011

Wage Request Number: 20110310-010

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## **The Massachusetts Prevailing Wage Law M.G.L. ch. 149, §§ 26 – 27**

### **NOTICE TO AWARDING AUTHORITIES**

- 'The enclosed wage schedule applies only to the specific project listed at the top and will be updated for any public construction project lasting longer than one (1) year.
- 'You should request an updated wage schedule from the Division of Occupational Safety if you have not opened bids or selected a contractor within 90 days of the date of issuance of the enclosed wage schedule.
- 'The wage schedule shall be incorporated in any advertisement or call for bids for the project for which it has been issued.
- 'Once a contractor has been selected by the awarding authority, the wage schedule shall be made a part of the contract for that project.

### **NOTICE TO CONTRACTORS**

- The enclosed wage schedule, and any updated schedule, must be posted in a conspicuous place at the work site during the life of the project.
- The wages listed on the enclosed wage schedule must be paid to employees on public works projects regardless of whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- The enclosed wage schedule applies to all phases of the project including the final clean-up. Contractors whose only role is to perform final clean-up must pay their employees according to this wage schedule.
- All apprentices must be registered with the Massachusetts Division of Apprentice Training in order to be paid at the reduced apprentice rates. If a worker is not registered with the Division of Apprentice Training, they must be paid the “total rate” listed on the wage schedule regardless of experience or skill level. For further information, please call (617) 727-3486 or write to the Division of Apprentice Training, 399 Washington Street, 4th Floor, Boston, MA 02108

## **WEEKLY PAYROLL RECORDS REPORT & STATEMENT OF COMPLIANCE**

In accordance with Massachusetts General Law c149, §27B, a true and accurate record must be kept of all persons employed on the public works project for which the enclosed rates have been provided. A Payroll Form has been printed on the reverse of this page and includes all the information required to be kept by law. Every contractor or subcontractor is required to keep these records and preserve them for a period of three years from the date of completion of the contract.

In addition, every contractor and subcontractor is required to submit a copy of their weekly payroll records to the awarding authority. This is required to be done on a weekly basis. Once collected, the awarding authority is also required to preserve those records for three years.

In addition, each such contractor, subcontractor or public body shall furnish to the Department of Labor & Workforce Development/Division of Occupational Safety within fifteen days after completion of its portion of the work a statement, executed by the contractor, subcontractor or public body who supervises the payment of wages, in the following form:

### **STATEMENT OF COMPLIANCE**

\_\_\_\_\_, 2011

I, \_\_\_\_\_,  
(Name of signatory party) (Title)

do hereby state:

That I pay or supervise the payment of the persons employed by

\_\_\_\_\_ on the \_\_\_\_\_  
(Contractor, subcontractor or public body) (Building or project)

and that all mechanics and apprentices, teamsters, chauffeurs and laborers employed on said project have been paid in accordance with wages determined under the provisions of sections twenty-six and twenty-seven of chapter one hundred and forty nine of the General Laws.

Signature \_\_\_\_\_

Title \_\_\_\_\_

DIVISION OF OCCUPATIONAL SAFETY, 399 WASHINGTON STREET, 5TH FL., BOSTON, MA. 02108



## CITY OF NEWTON

### SUMMARY OF WORK AND SPECIFIC REQUIREMENTS OF THE CONTRACT FOR PUBLIC WORKS CONSTRUCTION

#### A. SUMMARY OF WORK

1.

The work under this contract is for the reconstruction of approximately two-thousand four hundred (2,400) linear feet of variable (33'-40') width roadway, and for the installation of granite curbing and/or sidewalks at various locations along the remaining one-thousand four hundred (1,400) linear foot portion of the roadway.

The one-thousand four hundred (1,400) linear foot portion of this work shall be performed in conjunction with a separately issued cold-planing contract, therefore the scheduling of this portion of the work shall be at the discretion of the Engineer. Thus the successful bidder must be ready, willing, able, and ultimately required to accommodate the City of Newton in the scheduling of this work.

2. All other work described in the Project Manual and/or shown on the Plan(s) unless specifically indicated as not to be done.

#### B. In addition the work under the contract includes:

1. Work outside the Project Site as called for in the Project Manual and/or Plan(s) and as required for the performance of the work.
2. The restoration of any items damaged or destroyed by encroaching upon areas outside the Project Site.
3. All labor, materials, tools, and equipment necessary to do all the work required for the completion of each item as specified, which shall limited not only to the exact intent mentioned, but shall include incidental work necessary or customarily performed for the completion of that item.
4. All items not specifically mentioned or noted in the Project Manual and/or Plan(s), but which are obviously necessary to make a complete working installation.

C. The Proposed Contract Price shall be complete costs, including overhead, profit, insurance, transportation, and all other costs connected with, or incidental to the work described.

#### II. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

A. Upon notification the Contractor shall commence the work specified in the Project Manual as directed by the City. The work shall proceed in a continuous uninterrupted fashion with adequately staffed crews, in a satisfactory manner, which will assure that the work is completed in a timely manner to the satisfaction of the City.

B. The time for substantial completion pursuant to Article 2 of the Contract shall:

(Continued on next page)



## **NOTICE: \* TIME IS OF THE ESSENCE \***

**Within five (5) business days of the Notice Of Award the Contractor shall submit to the Purchasing Department:**

- **A signed contract.**
- **A Certificate of Insurance (naming the City as an additional insured)**
- **A Labor and Materials Payment Bond in the amount of 50% of the contract total.**

**Anticipated start date is May 16, 2011. Time for completion is one-hundred sixty (160) calendar days from the Notice To Proceed. A portion of this work is to be performed in conjunction with a separately issued cold-planing contract. The successful bidder is required to accommodate the City of Newton in the scheduling of this work.**

Time is of the essence for the completion of this contract. If the Contractor fails to achieve substantial or final completion of the Work within the time required by the contract, and unless an extension of time is granted, the Contractor shall pay to the City as liquidated damages, the applicable amount specified in **Article 6A** of the **General Conditions** for each day of delay. If different completion dates are specified in the Contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another section in this Contract, liquidated damages shall not be due the City. The Contractor remains liable for damages caused other than by delay.

### **III. INSURANCE REQUIREMENTS**

- A. The Contractor shall carry and maintain until acceptance of the work such Workmen's Compensation, Automobile Liability, Public Liability, Contingent Public Liability, Property Damage and Contingent Property Damage Insurance, each including blasting coverage, as shall protect him and any sub-contractor performing work covered by this contract from all claims and liability for damages for personal injury, including accidental death, and for property damage which may arise from operations under this contract, whether such operations be by himself or by any sub-contractor or by any one directly or indirectly employed by either of them.
- B. The City shall be named as an additional insured on such policy.
- C. The amounts of such insurance shall be as follows:
  - 1. Workmen's Compensation Insurance as required by Massachusetts General Law.
  - 2. Automobile Liability Insurance on all vehicles owned or hired for a.) Bodily Injury in an amount not less than \$500,000.00 for each occurrence, and not less than \$1,000,000.00 aggregate; b.) Property Damage in an amount not less than \$250,000.00 each occurrence, and not less than \$500,000.00 aggregate.
  - 3. Public Liability Insurance and Contingent Public Liability Insurance in an amount not less than \$500,000.00 for injuries, including accidental death to any one person, and subject to the same limit for each person, in an amount not less than \$1,000,000.00 on account of one accident.
  - 4. Property Damage Insurance and Contingent Property Damage Insurance in an amount not less than \$250,000.00 on account of one accident, and in an amount of not less than \$500,000.00 on account of all accidents.
  - 5. General Liability Insurance shall include Contractual Liability Insurance.

- D. Before any work is started, the successful bidder shall be required to file with the Chief Procurement Officer certificates of insurance coverage as detailed above, with policy numbers and dates of expiration.
- E. The Contractor shall indemnify, hold harmless and defend the City and its departments, officers, employees, servants, and agents from and against all actions, causes of actions, claims, demands, damages, costs, loss of services, expenses and compensation, including attorney's fees and interest arising out of or resulting directly or indirectly from the services rendered pursuant to this Contract, provided that any such action, cause of action, claim, demand, damage, cost, loss of service, expense, compensation (1) in any way grows out of bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, which (2) is caused in whole or in part by any act or omission of the Contractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

**END OF SECTION**

The Contractor shall insert prices for each item in ink, in both words and figures, and is to show a total bid price. In the event a discrepancy between the written words and figures, the written words shall govern. In the event an error in the bidders total bid price, the corrected total bid obtained by the summation of the products of the unit prices multiplied by the respective quantities shall stand as the bidder's total bid price.

The Contractor is required to review any related plans, conduct a full site review, and read all the provisions in the document before inserting prices, and is further advised to make his own determination as to the accuracy of the estimated quantities before inserting bid prices.

The estimated quantities shown here are based solely upon a reasonable assessment of the project parameters, thus the Contractor is advised that the actual quantities may vary substantially as field conditions necessitate.

**NOTICE:** In accordance with MGL Chapter 303 of the Acts of 2008 this bid contains price adjustments for Fuel (combination of Gasoline & Diesel). It is the bidder's responsibility to familiarize themselves with this price adjustment program prior to entering a bid.

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p><b>ITEM: 0.303FC-EX - FUEL COSTS FOR EXCAVATION OF EXISTING WALKWAY &amp; DRIVEWAY PAVEMENTS &amp; RELATED SOIL MATERIAL</b></p> <ul style="list-style-type: none"> <li>*Bidder's may elect <b>NOT</b> to bid the cost of fuel(s) separately by inserting the term <b>N/A</b> (i.e. <i>Not Applicable</i>) in all (4) <u>entry lines</u> of this Item. This is <b>a mandatory requirement</b> to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their <u>fuel costs</u> for this portion of the work into the bid price of <b>Item 3</b>.</li> <li>Contractor's choosing to bid this line item should <b>NOT</b> include the cost of fuel in the work to be performed under line <b>Item 3</b>.</li> <li>The City of Newton reserves the right to assess and validate the Contractor's fuel consumption information before and after awarding the bid.</li> </ul> <p>-----</p> <p><b>0.303FC-EX</b> = total combined number of gallons of Fuel (Diesel &amp; Gasoline) to excavate &amp; dispose of <b>One Cubic Yard</b> of material(s) wasted off-site (exclusive of Reclamation Material)</p> <p>(IN WORDS) _____ Gallons Per Cubic Yard</p> <p>(IN FIGURES) _____ Gallons Per Cubic Yard</p> <p>( _____ Gallons per C.Y) x ( \$ <u>2.977</u> /Gallon ) x  ^ Base Price ^  of diesel and gasoline = BPF  Per Mass Highway</p>	<b>1,300</b>	<b>C.Y.</b>	<p>Note: This factored value is for the <b>Comparison of Bids Only.</b> (See Spec. Prov.)</p> <p>\$ _____</p>

(Items continued on next page)

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p>ITEM: <b>0.303FC-CU - FUEL COSTS FOR CURB WORK*</b></p> <ul style="list-style-type: none"> <li>* Bidder's may elect <b>NOT</b> to bid the cost of fuel(s) separately by inserting the term <b>N/A</b> (<i>i.e. Not Applicable</i>) in all (4) <u>entry lines</u> of this Item. This is <b>a mandatory requirement</b> to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their <u>fuel</u> costs for this portion of the work into the bid price of <b>Items 29, 30 and 31.</b></li> <li><b>Contractor's choosing to bid this line item should NOT include the cost of fuel in the work to be performed under line Items 29, 30 and 31.</b></li> <li>The City of Newton reserves the right to assess and validate the Contractor's fuel consumption information before and after awarding the bid.</li> </ul> <p>-----</p> <p><b>0.303FC-CU</b> = total combined number of gallons of Fuel (Diesel &amp; Gasoline) to install and/or reset <b>One Linear Foot</b> of granite curbing.</p> <p>(IN WORDS)_____ Gallons Per Linear Foot</p> <p>(IN FIGURES)_____ Gallons Per Linear Foot</p> <p>( _____ Gallons per L.F) x ( \$ <u>2.977</u> /Gallon ) x  <sup>^ Base Price^</sup>  <i>of diesel and gasoline = BPF</i>  <i>Per Mass Highway</i></p>	6,930	L.F.	<p>Note: This factored value is for the <b><u>Comparison of</u></b> <b><u>Bids Only.</u></b> (See Spec. Prov.)</p> <p>\$_____</p>

(Items continued on next page)

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p>ITEM: <b>0.303FC-RE - FUEL COSTS FOR RECLAMATION</b> FINE GRADING AND ROLLING *</p> <ul style="list-style-type: none"> <li>* Bidder's may elect <b>NOT</b> to bid the cost of fuel(s) separately by inserting the term <b>N/A</b> (<i>i.e. Not Applicable</i>) in all (4) <u>entry lines</u> of this Item. This is <b>a mandatory requirement</b> to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their <u>fuel costs</u> for this portion of the work into the bid price of <b>Item 36</b>.</li> <li>Contractor's choosing to bid this line item should <b>NOT</b> include the cost of fuel in the work to be performed under line <b>Item 36</b>.</li> <li>The City of Newton reserves the right to assess and validate the Contractor's fuel consumption information before and after awarding the bid.</li> </ul> <p>-----</p> <p><b>0.303FC-RE</b> = total combined number of gallons of Fuel (Diesel &amp; Gasoline) to prepare <b>One Square Yard</b> of roadway surface.</p> <p>(IN WORDS)_____ Gallons Per Square Yard</p> <p>(IN FIGURES)_____ Gallons Per Square Yard</p> <p>( _____Gallons per S.Y.) x ( \$ _____2.977_____/Gallon ) x  ^ <i>Base Price</i> ^  <i>of diesel and gasoline = BPF</i>  <i>Per Mass Highway</i></p>	<b>6,500</b>	<b>S.Y.</b>	<p>Note: This factored value is for the <b><u>Comparison of</u></b> <b><u>Bids Only.</u></b> (See Spec. Prov.)</p> <p>\$_____</p>

(Items continued on next page)

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p>ITEM: <b>0.303FC-RP - FUEL COSTS FOR FURNISHING &amp; INSTALLING (SPREADER APPLIED) ROADWAY PAVEMENT*</b></p> <ul style="list-style-type: none"> <li>* Bidder's may elect <b>NOT</b> to bid the cost of fuel(s) separately by inserting the term <b>N/A</b> (<i>i.e. Not Applicable</i>) in all (4) <u>entry lines</u> of this Item. This is <b>a mandatory requirement</b> to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their <u>fuel costs</u> for this portion of the work into the bid price of <b>Items 40 and 41</b>.</li> <li>Contractor's choosing to bid this line item should <b>NOT</b> include the cost of fuel in the work to be performed under line <b>Items 40 and 41</b>.</li> <li>The City of Newton reserves the right to assess and validate the Contractor's fuel consumption information before and after awarding the bid.</li> </ul> <p>-----</p> <p><b>0.303FC-RP</b> = total combined number of gallons of Fuel (Diesel &amp; Gasoline) to install <b>One Ton</b> of roadway pavement.</p> <p>(IN WORDS) _____ Gallons Per Ton</p> <p>(IN FIGURES) _____ Gallons Per Ton</p> <p>( _____ Gallons per Ton) x ( \$ _____ 2.977 /Gallon ) x  ^ Base Price ^  of diesel and gasoline = BPF  Per Mass Highway</p>	1,850	TON	<p>Note: This factored value is for the <b><u>Comparison of Bids Only.</u></b> (See Spec. Prov.)</p> <p>\$ _____</p>

(Items continued on next page)

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p>ITEM: <b>0.303FC-CC - FUEL COSTS FOR FURNISHING &amp; INSTALLING CEMENT CONCRETE WALKS, DRIVEWAY APRONS AND/OR RAMPS*</b></p> <ul style="list-style-type: none"> <li>* Bidder's may elect <b>NOT</b> to bid the cost of fuel(s) separately by inserting the term <b>N/A</b> (<i>i.e. Not Applicable</i>) in all (4) <u>entry lines</u> of this Item. This is <b>a mandatory requirement</b> to verify the Contractor has waived their option to bid the cost of fuel(s) separately and has instead elected to factor their <u>fuel costs</u> for this portion of the work into the bid price of <b>Items 42, 43 and 44.</b></li> <li>Contractor's choosing to bid this line item should <b>NOT</b> include the cost of fuel in the work to be performed under line <b>Items 42, 43 and 44.</b></li> <li>The City of Newton reserves the right to assess and validate the Contractor's fuel consumption information before and after awarding the bid.</li> </ul> <p>-----</p> <p><b>0.303FC-RP</b> = total combined number of gallons of Fuel (Diesel &amp; Gasoline) to install <b>One Square Yard</b> of Cement Concrete Pavement.</p> <p>(IN WORDS) _____ Gallons Per Square Yard</p> <p>(IN FIGURES) _____ Gallons Per Square Yard</p> <p>( _____ Gallons per S.Y.) x ( \$ <u>2.977</u> /Gallon ) x  <sup>^ Base Price ^</sup>  <i>of diesel and gasoline = BPF</i>  <i>Per Mass Highway</i></p>	4,840	S.Y.	<p>Note: This factored value is for the <b><u>Comparison of</u></b> <b><u>Bids Only.</u></b> (See Spec. Prov.)</p> <p>\$ _____</p>

(Items continued on next page)

ITEM DESCRIPTION & BID PRICE	ESTIMATED QUANTITIES	UNIT	TOTAL COST
<p>ITEM: <b>0.303LA-</b> BASE PRICE FOR CALCULATING THE MONTHLY: <b>DIFFERENTIAL OF LIQUID ASPHALT</b></p> <p>(Informational Note: For the purpose of this program <u>One (1) Ton</u> of Type I-1 Bituminous Concrete shall contain six-hundreths (. 06) Ton of Liquid Asphalt)</p> <p>The <b><u>Base Price</u></b> for Liquid Asphalt is:</p> <p>\$ <u>487.50</u> PER <b>Ton of Liquid Asphalt</b>  <sup>^</sup><i>Base Price of Liquid Asphalt (BPLA)^</i>  <i>Per Mass Highway</i></p>	N/A	N/A	<p>The Base Price (BPLA) shown here shall be used to determine the monthly price adjustment (See Spec. Prov.)</p> <p>\$ <u>N/A</u></p>
<p>ITEM: <b>0.303PC-</b> BASE PRICE FOR CALCULATING THE MONTHLY: <b>DIFFERENTIAL OF PORTLAND CEMENT</b></p> <p>(Informational Note: For the purpose of this program One (1) Cubic Yard of 4,000 psi ¾” aggregate transit-mix cement concrete contains three-tenths (.3) Ton of Portland Cement) .</p> <p>The <b><u>Initial Cost Index (I)</u></b> for Portland Cement is :</p> <p>\$ <u>98.95</u> PER <b>Ton of Portland Cement</b>  <sup>^</sup><i>Base Price of Portland Cement (BPPC)^</i>  <i>Per Mass Highway</i></p>	N/A	N/A	<p>The Base Price (BPPC) shown here shall be used to determine the monthly price adjustment (See Spec. Prov.)</p> <p>\$ <u>N/A</u></p>

(Items continued on next page)



ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 1 - MOBILIZATION FOR ALL WORK ZONES</b> <b>(SURVEY SERVICES, CONFERENCES, VIDEO FILE, NOTIFICATIONS, ETC.)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LUMP SUM</b>	<b>1</b>	<b>L.S.</b>	\$ _____
<b>ITEM: 2.SS – MANUFACTURED SILT SACK FOR CATCHBASIN</b> <b>(SEDIMENTATION CONTROL)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>24</b>	<b>EA.</b>	\$ _____
<b>ITEM: 3 – EXCAVATION OF EXISTING WALKWAY &amp; DRIVEWAY</b> <b>PAVEMENTS &amp; RELATED SOIL MATERIAL</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>1,300</b>	<b>C.Y.</b>	\$ _____
<b>ITEM: 4 – EXPLORATORY EXCAVATION</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>25</b>	<b>C.Y.</b>	\$ _____
<b>ITEM: 5 – UNSUITABLE MATERIAL EXCAVATION IN TRENCHES</b> <b>(WITH DISPOSAL)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>15</b>	<b>C.Y.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 6 – ROCK EXCAVATION</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>75</b>	<b>C.Y.</b>	\$ _____
<b>ITEM: 7 – REMOVE EXISTING DRAIN STRUCTURE (BEYOND 6' LOCUS)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>2</b>	<b>EA.</b>	\$ _____
<b>ITEM: 8 – REMOVE EXISTING DRAIN LATERAL (BEYOND 6' LOCUS)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>25</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 9 – FURNISH &amp; PLACE ¾" CRUSHED STONE (PRIMARILY FOR SEWER BEDDING)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>50</b>	<b>TON</b>	\$ _____
<b>ITEM: 10 – TYPE 1E CONTROLLED DENSITY FILL (‘FAST SET’ &amp; EXCAVATABLE) (SUPPLEMENTAL ONLY. <u>NOT FOR CURB WORK</u>)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>20</b>	<b>C.Y.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 11 – GRAVEL FURNISHED FROM OUTSIDE THE SITE (FOR GENERAL USE)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>50</b>	<b>TON</b>	\$ _____
<b>ITEM: 12 – DENSE GRADED CRUSHED STONE (SUPPLEMENTAL)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>50</b>	<b>TON</b>	\$ _____
<b>ITEM: 13 – FURNISH, TRENCH &amp; LAY 8" SDR35 PVC SEWER PIPE</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>160</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 14 – FURNISH, TRENCH &amp; LAY 10" DUCTILE IRON DRAIN PIPE (CLASS 52)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>325</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 15 – PRECAST CONCRETE SEWER MANHOLE (EXCLUDING COVER &amp; FRAME)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>VERTICAL FOOT</b>	<b>9</b>	<b>V.F.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 16 – DRAIN MANHOLE (EXCLUDING COVER &amp; FRAME))</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>VERTICAL FOOT</b>	<b>20</b>	<b>V.F.</b>	\$ _____
<b>ITEM: 17 - STANDARD SINGLE CATCHBASIN W/4' SUMP (EXCLUDING FRAME &amp; GRATE)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>4</b>	<b>EA.</b>	\$ _____
<b>ITEM: 18 –STANDARD DOUBLE CATCHBASIN W/4' SUMP (EXCLUDING FRAME &amp; GRATE)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>4</b>	<b>EA.</b>	\$ _____
<b>ITEM: 19 – SPECIAL ‘CHUTE-TYPE’ DROP INLET (EXCLUSIVE OF THE ‘RECEPTOR’ STRUCTURE)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>3</b>	<b>EA.</b>	\$ _____
<b>ITEM: 20 - VACUUM &amp; PRESSURE TESTING OF (NEW) SEWER SYSTEM COMPONENTS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LUMP SUM</b>	<b>1</b>	<b>L.S.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 21 – FURNISH &amp; INSTALL A MANHOLE COVER &amp; FRAME</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SET</b>	<b>8</b>	<b>SET</b>	\$ _____
<b>ITEM: 22 – FURNISH &amp; INSTALL A SINGLE CATCHBASIN GRATE &amp; FRAME</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SET</b>	<b>2</b>	<b>SET</b>	\$ _____
<b>ITEM: 23 – FURNISH &amp; INSTALL A DOUBLE CATCHBASIN GRATE &amp; FRAME</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SET</b>	<b>3</b>	<b>SET</b>	\$ _____
<b>ITEM: 24 – ADJUST A PRE-EXISTING CATCHBASIN OR UTILITY CASTING (ALL ZONES) (EXCLUDING GATE BOXES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>20</b>	<b>EA.</b>	\$ _____
<b>ITEM: 25 – LOWER &amp; RAISE A PRE-EXISTING UTILITY CASTING IN <u>RECLAMATION AREAS</u> (EXCLUDING GATE BOXES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>35</b>	<b>EA.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 26 – ADJUST A PRE-EXISTING GATE BOX (NOT TO BE CONFUSED WITH SERVICE BOXES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>15</b>	<b>EA.</b>	\$ _____
<b>ITEM: 27 – LOWER &amp; RAISE A PRE-EXISTING GATE BOX IN <u>RECLAMATION AREAS</u> (NOT TO BE CONFUSED WITH SERVICE BOXES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>40</b>	<b>EA.</b>	\$ _____
<b>ITEM: 28 – TYPE SC GRANITE EDGESTONE CURB (FOR BUTTRESSING HANDICAP RAMPS)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>25</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 29 – RESET EXISTING CURB ( WITH CDF EMBEDMENT)) (INCLUDES CURB WORK REQ'D FOR HANDICAP RAMPS)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>2,800</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 30 – F &amp; I STRAIGHT GRANITE VA-4 CURB (WITH CDF EMBEDMENT) (INCLUDES 'ISOLATED' INSTALLATIONS &amp; HANDICAP RAMP WORK)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>4,000</b>	<b>L.F.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 31 – F &amp; I CURVED GRANITE VA-4 CURB (WITH CDF EMBEDMENT) (INCLUDES HANDICAP RAMP WORK)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>130</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 32 – F &amp; I 2-FOOT RADIUS GRANITE CORNER BLOCK</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>60</b>	<b>EA.</b>	\$ _____
<b>ITEM: 33 – F &amp; I 6' STRAIGHT GRANITE CURB GUTTER INLET (FOR SINGLE CATCHBASIN)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>2</b>	<b>EA.</b>	\$ _____
<b>ITEM: 34 – F &amp; I 7' STRAIGHT GRANITE CURB GUTTER INLET (FOR DOUBLE CATCHBASIN)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>6</b>	<b>EA.</b>	\$ _____
<b>ITEM: 35 –REMOVE &amp; STOCKPILE EXISTING GRANITE CURB</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>50</b>	<b>L.F.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 36 – RECLAMATION OF EXISTING BITUMINOUS CONCRETE ROADWAYS &amp; THE SUBSEQUENT FINE GRADING &amp; ROLLING OF THE PROCESSED MATERIAL</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>6,500</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 37 – REMOVAL &amp; DISPOSAL OF EXCESS RECLAMATION MATERIAL</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>CUBIC YARD</b>	<b>850</b>	<b>C.Y.</b>	\$ _____
<b>ITEM: 38 – 2" BITUMINOUS CONCRETE FOR TEMPORARY TRENCH RESURFACING</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>50</b>	<b>TON</b>	\$ _____
<b>ITEM: 39 – 4" TYPE I-1 BITUMINOUS CONCRETE FOR PERMANENT (PATCH) TRENCH RESURFACING (PLACED IN TWO COURSES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>150</b>	<b>TON</b>	\$ _____
<b>ITEM: 40 – FURNISH &amp; PLACE 1 ½" TYPE I-1 BITUMINOUS CONCRETE TOP MIX (WITH PRIOR TACK COAT APPLICATION)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>350</b>	<b>TON</b>	\$ _____



ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 41 – 4" TYPE I-1 BITUMINOUS CONCRETE ROADWAY PAVEMENT (PLACED IN TWO COURSES)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>TON</b>	<b>1,500</b>	<b>TON</b>	\$ _____
<b>ITEM: 42 – 4" CEMENT CONCRETE WALK WITH LAMPBLACK ( @ 2 POUNDS / CY )</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>4,150</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 43 – 6" CEMENT CONCRETE DRIVEWAY APRON WITH LAMPBLACK ( @ 2 POUNDS / CY )</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>650</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 44 – 8" 'HIGH-EARLY' CEMENT CONCRETE RAMP AT RAISED CROSSWALK WITH 8x8 WWF AND LAMPBLACK ( @ 2 POUNDS / CY )</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>40</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 45 – DETECTABLE PRE-CAST TILE AT HANDICAP RAMP/CURB CUT</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE FOOT</b>	<b>350</b>	<b>S.F.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 46 – 3" TYPE I-1 BITUMINOUS CONCRETE WALKS &amp; DRIVEWAYS (PUBLIC &amp; PRIVATE PROPERTY)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>350</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 47 – RESET AN EXISTING STONE BOUND</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>2</b>	<b>EA.</b>	\$ _____
<b>ITEM: 48 – FLAGSTONE WALK</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>10</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 49 – RESET/REBUILD BRICK WALKS OR PAVER BLOCK/COBBLESTONE AREAS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>10</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 50 – GRAVEL WALKS &amp; DRIVEWAYS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>20</b>	<b>S.Y.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 51 – HANDSET EDGING MATERIALS (COBBLE/EDGESTONE, ETC.)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>25</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 52 – RESET HEDGE &amp; TREES UP TO 2” TRUNK DIAMETER</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>25</b>	<b>L.F.</b>	\$ _____
<b>ITEM: 53 – REMOVE &amp; RESET OR THE SETTING OF A STREET SIGN POST</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>20</b>	<b>EA.</b>	\$ _____
<b>ITEM: 54 – LOAM BORDERS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>200</b>	<b>S.Y.</b>	\$ _____
<b>ITEM: 55 – REGRADING, LOAMING &amp; THE SEEDING OF LAWNS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE YARD</b>	<b>1,100</b>	<b>S.Y.</b>	\$ _____

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 56 – DUST CONTROL (CHEMICAL TREATMENT)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>POUND</b>	<b>2,000</b>	<b>LB.</b>	\$ _____
<b>ITEM: 57 – MATERIALS TESTING ALLOWANCE</b>  THE SUM OF: _____ <u><b>TWO THOUSAND</b></u> _____ DOLLARS AND _____ <u><b>NO</b></u> _____ CENTS (\$ _____ <u><b>2,000.00</b></u> _____) PER <b>ALLOWANCE</b>	<b>1</b>	<b>ALL.</b>	\$ <u><b>2,000</b></u>
<b>ITEM: 58 – MISCELLANEOUS WORK ALLOWANCE (ENGINEERS DISCRETION)</b>  THE SUM OF: _____ <u><b>SIX THOUSAND</b></u> _____ DOLLARS AND _____ <u><b>NO</b></u> _____ CENTS (\$ _____ <u><b>6,000.00</b></u> _____) PER <b>ALLOWANCE</b>	<b>1</b>	<b>ALL.</b>	\$ <u><b>6,000</b></u>
<b>ITEM: 59 – FURNISH &amp; MOUNT SAFETY &amp; SPECIALTY SIGNBOARDS (INCLUDING THE POST SYSTEM)</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>SQUARE FOOT</b>	<b>400</b>	<b>S.F.</b>	\$ _____
<b>ITEM: 60 – ALLOWANCE FOR PAYMENT OF POLICE OFFICERS</b>  THE SUM OF: _____ <u><b>NINETY THOUSAND</b></u> _____ DOLLARS AND _____ <u><b>NO</b></u> _____ CENTS (\$ _____ <u><b>90,000.00</b></u> _____) PER <b>ALLOWANCE</b>	<b>1</b>	<b>ALL.</b>	\$ <u><b>90,000</b></u>

ITEM DESCRIPTION & BID PRICE	EST. QTY	UNIT	TOTAL COST
<b>ITEM: 61 – WARNING AND/OR SAFETY DEVICES FOR THE CONTROL OF CONSTRUCTION OPERATIONS</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LUMP SUM</b>	<b>1</b>	<b>L.S.</b>	\$ _____
<b>ITEM: 62 – TREE PROTECTION</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>EACH</b>	<b>20</b>	<b>EA.</b>	\$ _____
<b>ITEM: 63 – FURNISH &amp; INSTALL A 4 DUCT @ 4” DIAMETER SCHEDULE 40 PVC PIPE (CONCRETE ENCASED) CONDUIT SYSTEM</b>  THE SUM OF: _____ DOLLARS AND _____ CENTS (\$ _____) PER <b>LINEAR FOOT</b>	<b>140</b>	<b>L.F.</b>	\$ _____

**TOTAL BID:**


*The Total for all items on this page must be inserted in Paragraph “C” of the BID FORM.*

**END OF SECTION**

**SECTION 0. 303****Item 0.303FC-EX - FUEL COSTS FOR EXCAVATION OF EXISTING WALKWAY & DRIVEWAY PAVEMENTS & RELATED SOIL MATERIAL\***Description

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. *Not Applicable*) in all (4) entry lines of Item 0.303FC-EX on Item Sheet 1. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid price of Item 3.**

(a) Under this item the Contractor shall be paid for all the fuel(s) consumed in the performance of this contract to provide all goods and services to complete this portion of this work.

(b) The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor's own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

**(c) IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.**

(d) The City of Newton reserves the right, before awarding the Contract, to request from the Contractor a tabulated accounting of the means and methods upon which the number of gallons bid by the Contractor was derived. The intent of this evaluation is to preserve the fairness of this program by preventing bidders from placing an imbalanced bid that may ultimately cause excessive financial impact to either party. These tabulations will include, but shall not be limited to, an accounting of all related equipment and their associated manufacturers fuel consumption rates which the Contractor/supplier intends to use to complete this portion of the work under this contract. In the event the City of Newton, subsequent to performing an analysis, determines that the Contractor's bid, with regard to the consumption of fuel **for this portion of the work is excessive for the type of equipment** traditionally deployed for this type of work then **the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids, if it be in the public interest to do so.**

(e) The Contractor shall also incorporate into their bid the amounts of fuel required for any work performed by their subcontractors or by their vendors.

Method of Administration

(f) In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current 'new' pricing of Diesel and Gasoline fuel as they are indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

Method of Administration

(g) When a cost adjustment is applied it shall be inclusive of the five (5%) variation.

(h) Payments for fuel shall be calculated at the end of each calendar month and they shall be based upon the acceptable number of cubic yards of existing walkway and driveway pavement and related soil material(s) excavated and disposed of within the applicable calendar month in which the work was performed. **(Program Note: In the event a continuous excavation/disposal operation spans several days but the excavation/disposal activities are performed in two separate months, then two separate fuel payments shall be made in conjunction/relative to the time-frame in which the activities were performed).**

(i) At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the collective amount of cubic yards pavement and related soil material excavated and disposed of during the applicable calendar month. The invoiced accounting shall bear the name of the Contractor and Vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the termination of operations for this portion of the work at the end of each calendar month. The City will have no obligation to pay at a higher rate of fuel for any unreported work performed in any calendar month which is subsequently forwarded after the operations for the month have ceased.**

(j) **Under this item no upward fuel adjustment will be made for any work or related activity which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(k) Payment formula:

**BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon)

**PPF** = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon)

**G** = Gallons of fuel bid by the Contractor to Excavate & Dispose of one (1) Cubic Yard of Pavement/Material  
(Gallons bid per C.Y. for all excavation & disposal services)

**CY** = The total number of Cubic Yards of Pavement(s) Excavated & disposed of in the applicable calendar month

**If the (PPF) does not exceed +/- 5% relative to the (BPF) then: (BPF) x G x CY = Fuel Payment (\$)**

**If the (PPF) does exceed +/- 5% relative to the (BPF) then: (PPF) x G x CY = Fuel Payment (\$)**

Basis of Payment

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in all (4) entry lines of Item 0.303FC-EX on Item Sheet 1. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid price of Item 3.**



Basis of Payment (Continued)

(l) The cost of fuel(s) consumed for the excavation and **disposal of one (1) cubic yard of walkway and/or driveway, and/or related soil materials** shall be paid for under **Item 0.303FC-EX**. The cost of fuel used to complete this portion of the work under this contract shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

(m) The Contractor shall be responsible for disbursing fuel cost payments to their subcontractors and/or to their vendors.

(n) No payment shall be made for any fuel(s) consumed to remedy any deficient and/or insufficient work performed by the Contractor, subcontractors and/or their vendors.

**SECTION 0. 303****Item 0.303FC-CU - FUEL COSTS FOR CURB WORK\***Description

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. *Not Applicable*) in all (4) entry lines of Item 0.303FC-CU on Item Sheet 2. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 29, 30 & 31.**

(a) Under this item the Contractor shall be paid for all the fuel(s) consumed in the performance of this contract to provide all goods and services to complete this portion of this work.

(b) The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor's own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

**(c) IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.**

(d) The City of Newton reserves the right, before awarding the Contract, to request from the Contractor a tabulated accounting of the means and methods upon which the number of gallons bid by the Contractor was derived. The intent of this evaluation is to preserve the fairness of this program by preventing bidders from placing an imbalanced bid that may ultimately cause excessive financial impact to either party. These tabulations will include, but shall not be limited to, an accounting of all related equipment and their associated manufacturers fuel consumption rates which the Contractor/supplier intends to use to complete this portion of the work under this contract. In the event the City of Newton, subsequent to performing an analysis, determines that the Contractor's bid, with regard to the consumption of fuel for **this portion of the work is excessive for the type of equipment** traditionally deployed for this type of work then **the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids, if it be in the public interest to do so.**

(e) The Contractor shall also incorporate into their bid the amounts of fuel required for any work performed by their subcontractors or by their vendors.

Method of Administration

(f) In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current 'new' pricing of Diesel and Gasoline fuel as they are indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

Method of Administration

(g) When a cost adjustment is applied it shall be inclusive of the five (5%) variation.

(h) Payments for fuel shall be calculated at the end of **each calendar month** and they shall be based upon the acceptable number of **linear feet of curbing installed** within the applicable calendar month in which the work was performed. **(Program Note: In the event a continuous curb installation operation spans several days but the work is performed in two separate months, then two separate fuel payments shall be made in conjunction/ relative to the time-frame in which the activities were performed).**

(i) At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the **collective amount of linear feet of curb installed during the applicable calendar month**. The invoiced accounting shall bear the name of the Contractor and Vendor and shall be **surrendered to the DPW Agent-In-Charge immediately upon the termination of operations for this portion of the work at the end of each calendar month. The City will have no obligation to pay at a higher rate of fuel for any unreported work performed in any calendar month which is subsequently forwarded after the operations for the month have ceased.**

(j) **Under this item no upward fuel adjustment will be made for any work or related activity which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(k) Payment formula:

**BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon)

**PPF** = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon)

**G** = Gallons of fuel bid by the Contractor to install or reset **one (1) Linear Foot of Curbing**  
(Gallons bid per L.F. of curbing installed or reset)

**LF** = The total number of Linear Feet of Curbing installed or reset d in the applicable calendar month

**If the (PPF) does not exceed +/- 5% relative to the (BPF) then: (BPF) x G x LF = Fuel Payment (\$)**

**If the (PPF) does exceed +/- 5% relative to the (BPF) then: (PPF) x G x LF = Fuel Payment (\$)**

Basis of Payment

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in all (4) entry lines of Item 0.303FC-CU on Item Sheet 2. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 29, 30 & 31.**

Basis of Payment (Continued)

(l) The cost of fuel(s) consumed for the installation or resetting **of one (1) linear foot of curbing** shall be paid for under **Item 0.303FC-CU**. The cost of fuel used to complete this portion of the work under this contract shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

(m) The Contractor shall be responsible for disbursing fuel cost payments to their subcontractors and/or to their vendors.

(n) No payment shall be made for any fuel(s) consumed to remedy any deficient and/or insufficient work performed by the Contractor, subcontractors and/or their vendors.

**SECTION 0. 303****Item 0.303FC-RE - FUEL COSTS FOR RECLAMATION, FINE GRADING & ROLLING\***Description

\* The Contractor may elect **NOT** to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in **all (4) entry lines** of Item 0.303FC-RE on **Item Sheet 3**. This is **a mandatory requirement** to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid price of Item 36.

(a) Under this item the Contractor shall be paid for all the fuel(s) consumed in the performance of this contract to provide all goods and services to complete this portion of this work.

(b) The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor's own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

(c) **IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.**

(d) The City of Newton reserves the right, before awarding the Contract, to request from the Contractor a tabulated accounting of the means and methods upon which the number of gallons bid by the Contractor was derived. The intent of this evaluation is to preserve the fairness of this program by preventing bidders from placing an imbalanced bid that may ultimately cause excessive financial impact to either party. These tabulations will include, but shall not be limited to, an accounting of all related equipment and their associated manufacturers fuel consumption rates which the Contractor/supplier intends to use to complete this portion of the work under this contract. In the event the City of Newton, subsequent to performing an analysis, determines that the Contractor's bid, with regard to the consumption of fuel for **this portion of the work is excessive for the type of equipment** traditionally deployed for this type of work then **the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids, if it be in the public interest to do so.**

(e) The Contractor shall also incorporate into their bid the amounts of fuel required for any work performed by their subcontractors or by their vendors.

Method of Administration

(f) In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current 'new' pricing of Diesel and Gasoline fuel as they are indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

Method of Administration

- (g) When a cost adjustment is applied it shall be inclusive of the five (5%) variation.
- (h) Payments for fuel shall be calculated at the end of **each calendar month** and they shall be based upon the acceptable number of **square yards of existing roadway surface reclaimed and fully processed** within the applicable calendar month in which the work was performed. **(Program Note: In the event a continuous reclamation operation spans several days but the work is performed in two separate months, then two separate fuel payments shall be made in conjunction/ relative to the time-frame in which the activities were performed.**
- (i) At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the **collective amount of square yards of roadway surface reclaimed and fully processed during the applicable calendar month**. The invoiced accounting shall bear the name of the Contractor and Vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the termination of operations for this portion of the work at the end of each calendar month. The City will have no obligation to pay at a higher rate of fuel for any unreported work performed in any calendar month which is subsequently forwarded after the operations for the month have ceased.**
- (j) **Under this item no upward fuel adjustment will be made for any work or related activity which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

- (k) Payment formula:

**BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon)

**PPF** = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon)

**G** = Gallons of fuel bid by the Contractor to Reclaim, Grade & Roll **one (1) Square Yard** of roadway  
(Gallons bid per S.Y. of roadway surface)

**SY** = The total number of Square Yards of Roadway Surface 'Reclamated' in the applicable calendar month

**If the (PPF) does not exceed +/- 5% relative to the (BPF) then: (BPF) x G x SY = Fuel Payment (\$)**

**If the (PPF) does exceed +/- 5% relative to the (BPF) then: (PPF) x G x SY = Fuel Payment (\$)**

Basis of Payment

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in all (4) entry lines of Item 0.303FC-RE on Item Sheet 3. This is a **mandatory requirement** to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid price of Item 36.**

Basis of Payment (Continued)

(l) The cost of fuel(s) consumed for the reclamation, fine grading and rolling of **one (1) square yard of roadway surface** shall be paid for under **Item 0.303FC-RE**. The cost of fuel used to complete this portion of the work under this contract shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

(m) The Contractor shall be responsible for disbursing fuel cost payments to their subcontractors and/or to their vendors.

(n) No payment shall be made for any fuel(s) consumed to remedy any deficient and/or insufficient work performed by the Contractor, subcontractors and/or their vendors.



**SECTION 0. 303****Item 0.303FC-RP - FUEL COSTS FOR FURNISHING & INSTALLING (SPREADER APPLIED)  
ROADWAY PAVEMENT\***Description

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. *Not Applicable*) in all (4) entry lines of Item 0.303FC-RP on Item Sheet 4. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 40 & 41.**

(a) Under this item the Contractor shall be paid for all the fuel(s) consumed in the performance of this contract to provide all goods and services to complete this portion of this work.

(b) The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor's own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

**(c) IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.**

(d) The City of Newton reserves the right, before awarding the Contract, to request from the Contractor a tabulated accounting of the means and methods upon which the number of gallons bid by the Contractor was derived. The intent of this evaluation is to preserve the fairness of this program by preventing bidders from placing an imbalanced bid that may ultimately cause excessive financial impact to either party. These tabulations will include, but shall not be limited to, an accounting of all related equipment and their associated manufacturers fuel consumption rates which the Contractor/supplier intends to use to complete this portion of the work under this contract. In the event the City of Newton, subsequent to performing an analysis, determines that the Contractor's bid, with regard to the consumption of fuel for **this portion of the work is excessive for the type of equipment** traditionally deployed for this type of work then **the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids, if it be in the public interest to do so.**

(e) The Contractor shall also incorporate into their bid the amounts of fuel required for any work performed by their subcontractors or by their vendors.

Method of Administration

(f) In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current 'new' pricing of Diesel and Gasoline fuel as they are indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

Method of Administration

(g) When a cost adjustment is applied it shall be inclusive of the five (5%) variation.

(h) Payments for fuel shall be calculated at the end of **each calendar month** and they shall be based upon the acceptable number of **tons of Roadway Pavement installed** within the applicable calendar month in which the work was performed. **(Program Note: In the event a continuous paving operation spans several days but the work is performed in two separate months, then two separate fuel payments shall be made in conjunction/ relative to the time-frame in which the activities were performed).**

(i) At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the **collective amount of tons of Roadway Pavement installed during the (applicable) calendar month**. The invoiced accounting shall bear the name of the Contractor and Vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the termination of operations for this portion of the work at the end of each calendar month. The City will have no obligation to pay at a higher rate of fuel for any unreported work performed in any calendar month which is subsequently forwarded after the operations for the month have ceased.**

(j) **Under this item no upward fuel adjustment will be made for any work or related activity which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(k) Payment formula:

**BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon)

**PPF** = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon)

**G** = Gallons of fuel bid by the Contractor to install **one (1) Ton of Roadway Pavement**  
(Gallons bid per Ton of roadway pavement installed)

**Ton** = The total number of Tons of Roadway Pavement applied in the applicable calendar month

**If the (PPF) does not exceed +/- 5% relative to the (BPF) then: (BPF) x G x Ton = Fuel Payment (\$)**

**If the (PPF) does exceed +/- 5% relative to the (BPF) then: (PPF) x G x Ton = Fuel Payment (\$)**

Basis of Payment

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in all (4) entry lines of Item 0.303FC-RP on Item Sheet 4. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 40 & 41.**

Basis of Payment (Continued)

(l) The cost of fuel(s) consumed to furnish and install **one (1) ton of roadway pavement** material shall be paid for under **Item 0.303FC-RP**. The cost of fuel used to complete this portion of the work under this contract shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

(m) The Contractor shall be responsible for disbursing fuel cost payments to their subcontractors and/or to their vendors.

(n) No payment shall be made for any fuel(s) consumed to remedy any deficient and/or insufficient work performed by the Contractor, subcontractors and/or their vendors.

**SECTION 0. 303****Item 0.303FC-CC - FUEL COSTS FOR FURNISHING & INSTALLING CEMENT CONCRETE WALKS, DRIVEWAY APRONS AND/OR RAMPS\***Description

\* The Contractor may elect **NOT** to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in **all (4) entry lines** of Item 0.303FC-CC on **Item Sheet 5**. This is a **mandatory requirement** to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 42, 43 & 44.

(a) Under this item the Contractor shall be paid for all the fuel(s) consumed in the performance of this contract to provide all goods and services to complete this portion of this work.

(b) The intent of this program is to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the cost of petroleum based fuel products. It is important to note that due to the numerous types of; fuel, equipment, vehicles, programs, and efficiency factors related to each of these operational elements and therefore unique to the Contractor's own enterprises, that any fuel adjustments made under this item are intended only to defray and offset extraordinary market trends in petroleum based fuel products.

(c) **IMPORTANT NOTE: An adjustment to the cost of fuels may result in an increase of payment if the fuel market has trended upward, or it may otherwise result in a decrease of payment if the fuel market has trended downward.**

(d) The City of Newton reserves the right, before awarding the Contract, to request from the Contractor a tabulated accounting of the means and methods upon which the number of gallons bid by the Contractor was derived. The intent of this evaluation is to preserve the fairness of this program by preventing bidders from placing an imbalanced bid that may ultimately cause excessive financial impact to either party. These tabulations will include, but shall not be limited to, an accounting of all related equipment and their associated manufacturers fuel consumption rates which the Contractor/supplier intends to use to complete this portion of the work under this contract. In the event the City of Newton, subsequent to performing an analysis, determines that the Contractor's bid, with regard to the consumption of fuel for **this portion of the work is excessive for the type of equipment** traditionally deployed for this type of work then **the City of Newton reserves the right to waive any informalities in any or all bids, or to reject any or all bids, if it be in the public interest to do so.**

(e) The Contractor shall also incorporate into their bid the amounts of fuel required for any work performed by their subcontractors or by their vendors.

Method of Administration

(f) In accordance with Chapter 303 Acts of 2008, the City of Newton shall use the most current 'new' pricing of Diesel and Gasoline fuel as they are indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The **average** of these two values (Diesel & Gasoline) shall serve as the value basis for determining the **Base Price** of Fuel (BPF) at the time of the advertisement. Subsequently, during the course of the contract, the **Period Price** of Fuel (PPF) shall be determined in the same manner, but at the end of each calendar month, and if the **averaged** Period Price (PPF) has either increased or decreased by more than five percentage points (5%) relative to the **averaged** Base Price of Fuel (BPF), then the cost of fuel(s) for the applicable calendar month shall be paid for at the adjusted rate, otherwise the cost of fuel(s) for the applicable calendar month shall be paid for at the initial Base Price of Fuels.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

Method of Administration

(g) When a cost adjustment is applied it shall be inclusive of the five (5%) variation.

(h) Payments for fuel shall be calculated at the end of each calendar month and they shall be based upon the acceptable number of Square Yards of cement concrete pavement installed within the applicable calendar month in which the work was performed. **(Program Note: In the event a continuous paving operation spans several days but the work is performed in two separate months, then two separate fuel payments shall be made in conjunction/ relative to the time-frame in which the activities were performed).**

(i) At the end of each calendar month the Contractor shall furnish the Engineer with an accurate measured and tabular accounting which clearly shows the collective amount of square yards of cement concrete walks, driveway aprons and/or ramps installed during the applicable calendar month. The invoiced accounting shall bear the name of the Contractor and Vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the termination of operations for this portion of the work at the end of each calendar month. The City will have no obligation to pay at a higher rate of fuel for any unreported work performed in any calendar month which is subsequently forwarded after the operations for the month have ceased.**

(j) **Under this item no upward fuel adjustment will be made for any work or related activity which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(k) Payment formula:

**BPF** = The Base Price of Fuel on the bid release date (Averaged cost of Diesel & Gasoline in \$/Gallon)

**PPF** = The Period Price of Fuel for the applicable calendar month (Averaged cost of Diesel & Gasoline in \$/Gallon)

**G** = Gallons of fuel bid by the Contractor to install one (1) Square Yard of Cement Concrete Pavement  
(Gallons bid per Square Yard of Cement Concrete pavement installed)

**SY** = The total number of Square Yards of Cement Concrete applied in the applicable calendar month

**If the (PPF) does not exceed +/- 5% relative to the (BPF) then: (BPF) x G x SY = Fuel Payment (\$)**

**If the (PPF) does exceed +/- 5% relative to the (BPF) then: (PPF) x G x SY = Fuel Payment (\$)**

Basis of Payment

**\* The Contractor may elect NOT to bid the cost of fuels separately by inserting the term N/A (i.e. Not Applicable) in all (4) entry lines of Item 0.303FC-CC on Item Sheet 5. This is a mandatory requirement to verify that the Contractor has formally waived their option to bid the cost of fuel(s) separately and has instead elected to factor the fuel costs for this portion of the work into the separate bid prices of Item 42, 43 & 44.**

Basis of Payment (Continued)

(l) The cost of fuel(s) consumed to furnish and install **one (1) Square Yard of cement concrete walk, driveway apron and/or ramp system shall be** paid for under **Item 0.303FC-CC**. The cost of fuel used to complete this portion of the work under this contract shall be made in accordance with the applicable Period Price for Diesel & Gasoline fuels as posted for each calendar month in which the work was performed and as specified herein.

(m) The Contractor shall be responsible for disbursing fuel cost payments to their subcontractors and/or to their vendors.

(n) No payment shall be made for any fuel(s) consumed to remedy any deficient and/or insufficient work performed by the Contractor, subcontractors and/or their vendors.

**SECTION 0. 303****Item 0.303LA - BASE PRICE FOR CALCULATING THE MONTHLY:  
DIFFERENTIAL FOR LIQUID ASPHALT****Description**

(a) Under this item a differential value shall be calculated and applied to the payment on a monthly basis. The differential value shall be based upon the amount of Liquid Asphalt contained in the total tare weight of Type I-1 bituminous concrete (hot-mix) supplied, delivered and installed for each respective calendar month in which this portion of the work is performed.

(b) **Item 0. 303LA** is to provide a structured means, whereby the cost of the Liquid Asphalt **contained in Type I-1 bituminous concrete**, is evaluated each calendar month, and under certain market conditions this value shall be adjusted **either upward or downwards** to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the price of this particular commodity.

(c) **IMPORTANT NOTE: An adjustment to the cost of the Liquid Asphalt component may result in an increase of payment, if the market has trended upward, or it may otherwise result in a decrease of payment, if the market for Liquid Asphalt has trended downward. Further, these adjustments do not compensate the Contractor for the entire cost of the bituminous concrete products consumed in the execution of this contract but only for the monthly differential value(s) which may occur with regard to the Liquid Asphalt component contained in one (1) ton of Type I-1 bituminous concrete.**

**Method of Administration**

(d) In accordance with Chapter 303 Acts of 2008 the City of Newton shall use the most current 'new' pricing for **Liquid Asphalt** as indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The value at the time of advertisement shall serve as the Base Price of Liquid Asphalt (BPLA). Subsequently, and during the course of the contract, the Period Price of the Liquid Asphalt (PPLA) component shall be determined in the same manner and at the end of each respective calendar month, and if the Period Price (PPLA) has either increased or decreased by more than five percentage points (5%) relative to the Base Price (BPLA) index, then the differential cost of the Liquid Asphalt component shall be paid adjusted accordingly, otherwise no adjustment shall be made.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

(e) The differential value for the Liquid Asphalt component shall be calculated at the end of each calendar month and it shall be based upon the number of acceptable tons of bituminous concrete supplied, delivered and installed within that particular calendar month. This value shall be derived by applying a fixed factor to the tonnage of Liquid Asphalt that is contained in one (1) ton of Type I-1 bituminous concrete mix. **(Program Note: In the event a continuous delivery & paving operation spans several days but is performed in two separate months, then two separate Liquid Asphalt calculations shall be made with respect to the month in which the asphalt was applied.)**

(f) When a cost differential is applied it shall be inclusive of the five (5%) variation.



Method of Administration (Continued)

(g) Immediately upon delivery of any bituminous concrete product, the Contractor shall furnish the Engineer with a computer generated invoice that has been issued directly by the bituminous concrete batching plant. The invoice shall clearly show the **tare weight, the type of bituminous concrete, and the date of delivery** for each load of bituminous concrete which is ultimately delivered, discharged and accepted. The plant issued tare/weight slips shall bear the name of the vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the delivery of the material. The City will have no obligation to pay for any errant slips which are forwarded after the delivery vehicle has exited the project site.**

(h) **No upward Liquid Asphalt component adjustment will be made for any delivery and discharge which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(i) Payment formula:

**BPLA** = The Base Price Liquid Asphalt Cost Index on the bid release date (\$/Ton of Liquid Asphalt)

**PPLA** = The Period Price for One Ton of Liquid Asphalt for the applicable calendar month in which it was delivered (\$/Ton of Liquid Asphalt)

**TBC** = Total tare Tons of bituminous concrete delivered & discharged in the applicable calendar month (Tons)

**.06** = **Tons of Liquid Asphalt contained in One (1) Ton Type I-1 bituminous concrete**  
(120 lbs. Liquid Asphalt/Ton Bit. Conc. = **.06** Tons Liquid Asphalt/Ton Bit. Conc.)

**If the (PPLA) does not exceed +/- 5% relative to the (BPLA) then: No differential adjustment.**

**If the (PPLA) exceeds +/- 5% relative to the (BPLA) then:**

$$(PPLA - BPLA) \times TBC \times .06 = \text{Differential Value for Current Pay Period (\$)}$$

Basis of Payment

(j) Under **Item 0.303LA** the differential value for **Liquid Asphalt contained in One (1) Ton of Type I-1 bituminous concrete** used to complete the work under this contract shall be made in accordance with the Period Price index values for Liquid Asphalt posted for each calendar month in which the work was performed and relative to the Base Price as specified herein. Subsequently these values shall be factored in accordance with the above-noted formula (Par. i).

(k) **The differential value for Liquid Asphalt shall be based upon a fixed mean value of six-hundredths (.06) Ton Liquid Asphalt contained in One (1) Ton of Type I-1 Bituminous Concrete (for any 'layer' or roadway end-use), with said value differential being factored only on the number of Tons of Bituminous Concrete actually used, verified and accepted by the Engineer.**

Basis of Payment (Continued)

(l) No adjustment shall be made for any material which is rejected or is deemed to be of an inferior quality. Nor shall any adjustment be made for Liquid Asphalt contained in any **bituminous concrete** material used to remedy any deficient work which was initially performed by the Contractor and/or vendor under this contract, and which is proven to be deficient and/or of inferior quality during and/or subsequent to discharge.

(m) The Contractor shall be responsible for disbursing any Liquid Asphalt cost adjustments to their subcontractors and/or to their vendors.

**SECTION 0. 303****ITEM 0.303PC - BASE PRICE FOR CALCULATING THE MONTHLY:  
DIFFERENTIAL FOR PORTLAND CEMENT****Description**

(a) Under this item a differential value shall be calculated and applied to the payment on a monthly basis. The differential value shall be based upon the amount of Portland Cement contained in the total tare weight of one (1) cubic yard of 4,000 psi ready-mix cement concrete supplied, delivered and installed for each respective calendar month in which this portion of the work is performed.

(b) **Item 0. 303PC** is to provide a structured means, whereby the cost of the Portland Cement **contained in one (1) cubic yard of 4,000 psi ready-mix cement concrete**, is evaluated each calendar month, and under certain market conditions this value shall be adjusted **either upward or downwards** to maintain a reasonable and continuous parity with the regional fluctuations that may occur in the price of this particular commodity.

(c) **IMPORTANT NOTE: An adjustment to the cost of the Portland Cement component contained in cement concrete may result in an increase of payment, if the market has trended upward, or it may otherwise result in a decrease of payment, if the market for Portland Cement has trended downward. Further, these adjustments do not compensate the Contractor for the entire cost of the Portland Cement concrete products consumed in the execution of this contract but only for the monthly differential value(s) which may occur with regard to the Portland Cement component that is contained in one (1) cubic yard of 4,000 psi ready-mix cement concrete.**

**Method of Administration**

(d) In accordance with Chapter 303 Acts of 2008 the City of Newton shall use the most current 'new' pricing for **Portland Cement** as indicated on the Mass Highway web site at the time of advertisement.

<http://www.mhd.state.ma.us/default.asp?pgid=content/fuelPrices&sid=about#para24>

The value at the time of advertisement shall serve as the Base Price of Portland Cement (BPPC). Subsequently, and during the course of the contract, the Period Price of the Portland Cement (PPPC) component shall be determined in the same manner and at the end of each respective calendar month, and if the Period Price (PPPC) has either increased or decreased by more than five percentage points (5%) relative to the Base Price (BPPC) index, then the differential cost of the Portland Cement component shall be adjusted accordingly, otherwise no adjustment shall be made.

**The Contractor is advised to verify these value standards and citations prior to placing their bid.**

(e) The differential value for the Portland Cement component shall be calculated at the end of each calendar month and it shall be based upon the number of acceptable **cubic yards of concrete** supplied, delivered and installed within that particular calendar month. This value shall be derived by applying a fixed factor to the tonnage of Portland Cement that is contained in one (1) cubic yard of 4,000 psi ready-mix cement concrete. **(Program Note: In the event a continuous delivery & paving operation spans several days but is performed in two separate months, then two separate Portland Cement calculations shall be made with respect to the month in which the cement concrete was applied.)**

(f) When a cost differential is applied it shall be inclusive of the five (5%) variation.

Method of Administration (Continued)

(g) Immediately upon delivery of any ready-mix cement concrete product, the Contractor shall furnish the Engineer with a computer generated invoice that has been issued directly by the cement concrete batching plant. The invoice shall clearly show the **tare volume, the type of cement concrete, and the date of delivery** for each load of ready-mix cement concrete which is ultimately delivered, discharged and accepted. The plant issued tare/volume slips shall bear the name of the vendor and shall **be surrendered to the DPW Agent-In-Charge immediately upon the delivery of the material. The City will have no obligation to pay for any errant slips which are forwarded after the delivery vehicle has exited the project site.**

(h) **No upward Portland Cement component adjustment will be made for any delivery and discharge which takes place beyond the completion date of the contract** unless the Contractor's work has been delayed due to no fault of their own (i.e. Preparation work that must be performed by others before the Contractor can complete their own tasks in the contractually allotted time.) Any such delay must be brought to the attention of the DPW Agent-In-Charge in a timely manner at which time the Agent shall investigate, verify, and document the extenuating circumstances and inform the Contractor of their decision.

Method of Payment

(i) Payment formula:

**BPPC** = The Base Price Portland Cement Cost Index on the bid release date (\$/Ton of Portland Cement)

**PPPC** = The Period Price for One Ton of Portland Cement for the applicable calendar month in which it was delivered (\$/Ton of Portland Cement)

**VPC** = Total tare Volume of Portland Cement Concrete delivered & discharged in the applicable calendar month (Cubic Yards)

**. 3 = Tons of Portland Cement contained in One (1) Cubic Yard of 4,000 psi ¾" aggregate cement concrete**

**If the (PPPC) does not exceed +/- 5% relative to the (BPPC) then: No differential adjustment.**

**If the (PPPC) exceeds +/- 5% relative to the (BPPC) then:**

$$(PPPC - BPPC) \times VPC \times .3 = \text{Differential Value for Current Pay Period (\$)}$$

Basis of Payment

(j) Under **Item 0.303PC** the differential value for the Portland Cement component **contained in One (1) Cubic Yard of 4,000 psi ¾" aggregate cement concrete** used to complete the work under this contract shall be made in accordance with the Period Price index values for Portland Cement posted for each calendar month in which the work was performed and relative to the Base Price as specified herein. Subsequently these values shall be factored in accordance with the above-noted formula (Par. i).

(k) **The differential value for Portland Cement shall be based upon a fixed mean value of three-tenths (.3) Ton of Portland Cement contained in One (1) Cubic Yard of 4,000 psi ¾" aggregate cement concrete, with said value differential being factored only on the number of Cubic Yards of Cement Concrete actually used, verified and accepted by the Engineer. To that end the Engineer reserves the right to verify, by field measurement and thickness requirements, the correlation of tare slips versus the field factored volumes, and shall apply these value(s) accordingly.**

Basis of Payment (Continued)

(l) No adjustment shall be made for any material which is rejected or is deemed to be of an inferior quality. Nor shall any adjustment be made for Portland Cement contained in any ready-mix cement concrete material used to remedy any deficient work which was initially performed by the Contractor and/or vendor under this contract, and which is proven to be deficient and/or of inferior quality during and/or subsequent to discharge.

(m) The Contractor shall be responsible for disbursing any Portland Cement cost adjustments to their subcontractors and/or to their vendors.

**SECTION 1****Item 1 – MOBILIZATION FOR ALL WORK ZONES  
(SURVEY SERVICES, CONFERENCES, VIDEO FILE, NOTIFICATIONS, ETC.)****Description**

- (a) **Under the direction of a Massachusetts Professional Land Surveyor (PLS)** the Contractor shall extract, correlate, and subsequently post the design grades in the field as shown on the plan and/or as otherwise shown on the City supplied profile. **IMPORTANT: The Contractor is responsible for having the accuracy of the plan information verified with regard to both the stationing and the grade assigned to the benchmark points by performing a field check between successive points prior to locating and posting any design grades.**
- (b) The Contractor is to make a video tape and/or photographic record of all existing sideline conditions, prior to the commencement of construction activities, and/or as may be required as the construction activities progress, for the purpose of documenting all decrepit, and/or extraordinary points of concern. All video and picture making shall be done on foot and shall not be 'shot' from a vehicle.
- (c) The Contractor is to coordinate and make accommodations for all work performed on private property in the execution of this contract, and is to further coordinate, arrange and/or make accommodations for the performance of all second party utility work which may be required in order to complete the work required under this contract.
- (d) The Contractor is responsible for the scheduling and coordination of all Police services under this item, however the actual cost of Police Services will be paid for under **Item 60**.
- (e) Under this item the Contractor will be required to attend informational meetings, typically one for the general public when deemed necessary, and several with the City of Newton administration in order to discuss and subsequently address all points of concern, including but not limited to a Preconstruction Conference and Progress Conference(s) and inspection walk-throughs.
- (f) Under this item the Contractor is responsible for processing all the necessary paperwork in the execution of this contract, as well as providing and distributing fliers and notifications to abutters and other concerned parties as the project commences and as it progresses.
- (g) **Under this item the Contractor shall comply with all special procedural and/or other site specific directives as stipulated on the plan(s) to ensure a structured and efficient execution of this contract. In addition, and from time to time, the Contractor shall also be required to accommodate and comply with other special requests so that the needs of the general public, abutters, and/or other City of Newton agencies are addressed swiftly and appropriately.**
- (gg) Under this item the Contractor shall work closely and cooperatively with the Engineer to resolve all field and/or administrative issues. This cooperative work shall consist of, but is not limited to, performing field investigations to determine the best course of action(s) to address each particular issue at hand, which work may require survey and/or preliminary layout efforts by the Contractor. In addition the Contractor shall assign field personnel for the purpose of performing any investigative activities, or for the scheduling of the same, which work shall be done in a timely manner at the request of the Engineer, and/or for contacting and coordinating with any interested party for the purpose of expediting the project.

Method of Compliance

(h) **IMPORTANT: The Contractor is responsible for having the accuracy of the plan information verified with regard to both the stationing and the grade assigned to the benchmark points by performing a field check between successive points prior to locating and posting any design grades.**

The grade points shall be posted all along the roadway corridor on sturdy colorized four foot (4') high iron pins and/or stakes such that the final roadway, once completed, fully complies with the design scheme and/or with any modification necessitated by field changes ordered by the Engineer. However, the posting of grades shall not be limited to just the design grades but shall also include the interpolation and posting of intermediate grades and/or the re-posting of certain grades, as may be from time to time required by any interested party in order to successfully investigate and/or otherwise install, to the satisfaction of the Engineer, any drainage, curbing, pavement and/or any other grade dependent project related component or grade dependent issue.

(i) The Contractor shall coordinate the grading and layout activities with the Engineer to ensure that the design grades are posted in an expeditious and acceptable manner. To that end the Contractor shall supply and install, at all critical grade points identified on the plan (and/or profile), as many sturdy pins and/or stakes as he deems necessary, or as otherwise may be required by the Engineer. The pins and/or stakes, once set, shall be clearly marked with paint and flagging such that their physical location, as well as the posted grades, can be easily seen by the general public and by the field personnel. Subsequently, once the pins and/or stakes have served their purpose, they shall be immediately removed by the Contractor.

(j) The Contractor is to coordinate with the Engineer in making a video tape and/or photographic record of all existing sideline conditions prior to the commencement of construction activities, or as otherwise may become necessary as the construction activities commence, for the purpose of documenting all decrepit, and/or extraordinary points of concern or interest. This video record shall be made by the Contractor and a copy, or a secondary video tape, shall be delivered to the Engineer.

(k) As the project commences the Contractor may opt to make a photographic record in lieu of a videotape but only to supplement the preconstruction sideline video survey, and only when a photographic record is deemed necessary and sufficient by the Engineer and/or the Contractor.

(l) Videos and/or photographs are to be taken and delivered to the Engineer in such a manner that the subject matter can be clearly seen, and in such a timely manner that the collected information is not lost. **The video and/or photographs are to be made on foot via a hand-carried camera. No digital pictures shall be allowed. Only conventionally developed film is to be used.**

(m) The Contractor is to give ample notice prior to performing certain extraordinary construction related activities on private lands (i.e walls, steps etc.), and/or is to discuss, and/or is to make safe and reasonable accommodation of access, for all private property abutters affected by the scheduled construction activities at hand. **In certain cases the Contractor will be further required to make special accommodations for the handicapped or for other physically challenged or sensor impaired individuals who live in or about the construction area so that their needs may be appropriately addressed.** Notice of intent to construct or to disturb private property and/or access routes shall be made at least twenty four (24) hours in advance of the scheduled activity and/or as directed by the Engineer. This notification shall be made in writing on a format acceptable to the Engineer, with said notices being posted at the subject address in a location nearest to the regular mail delivery location. The decision to post notices will be at the discretion of the Engineer in the field.

Method of Measurement

(n) The Engineer shall make **percentage payments** as he deems appropriate during the course of these activities.

Basis of Payment

(o) Under **Item 1** the Contractor will be paid the **lump sum** price for all administrative activities, labor and/or materials required to complete these tasks throughout the entire term of the project.



**SECTION 2****Item 2 – MANUFACTURED SILT SACKS FOR CATCHBASIN (SEDIMENTATION CONTROL)****Description**

(a) Under this item the Contractor shall install silt sacks in all catchbasins in accordance with the detail as shown on the plans. The silt sacks shall be strategically installed along the roadway such that any soil contaminated run-off generated by the Contractor's operations is captured in the silt sack. To that end the silt sacks shall be continuously moved forward of the work as the work progresses and shall not be removed from any catchbasin until such time as all potential run-off for the immediate workzone is deemed to be reasonably free of silt contamination by the Conservation Commission and/or the Engineer.

**Material**

(b) **The silt sack shall be a manufactured unit** that is specifically designed as a sedimentation containment device and it shall be provided with integrally equipped fabric lugs through which shall pass #8 (eight) steel reinforcing bar such that, upon the removal of the catchbasin grate, the silt sack shall neither fall into the catchbasin structure nor shall it allow its contents to prematurely empty into the catchbasin unit.

(c) The steel rebars shall be cut and fitted to the silt sack in such a way that they pose no projection hazards. In addition, the steel bars shall be reasonably free of any sharp edges.

(d) In the event the silt sack is installed where there is a curb opening then the Contractor shall also equip the silt sack unit with a foam filler to prevent any sedimentation from bypassing the silt sack.

**Method of Construction**

(e) The placement of new silt sacks shall be at the discretion of the Engineer.

(f) The Contractor shall not commence with any trenching operations until such time as silt sacks have been installed in every catchbasin that lies downstream from his workzone and has the potential of intercepting the run-off from the workzone.

(g) Once the silt sacks have been fitted to the catchbasin the Contractor shall replace the catchbasin grate in such a way that it lies flush with the top of the catchbasin frame. Whenever this cannot be achieved, or whenever a potential tripping hazard exists then the Contractor shall place a safety device at that location.

(h) The Contractor shall be diligent in keeping the silt sack clean and he shall remove all excessive silt either by his own volition or as he is otherwise directed to do so by the Engineer.

(i) The Contractor shall continue to move the silt sacks forward of the work as the Engineer either directs and/or allows or the Contractor shall otherwise install supplemental silt sacks as the case(s) may necessitate.

(j) When the silt sacks are emptied it shall be done in a responsible fashion so that the captured silt is immediately discarded from off of the site.

(k) Double catchbasins shall be provided with two silt sacks

Method of Measurement

(l) Measurements taken for payment of shall be **for each new silt sack** that is initially provided by the Contractor. **To that end the Contractor will be required to subsequently remove, empty and move the silt sack to a new location without further compensation.**

Basis of Payment

(m) Under **Item 2** the Contractor will be paid the contract unit price **for each new silt sack** that is initially provided by the Contractor under the direction of the Engineer. **To that end the Contractor will be required to subsequently remove, empty and then move the used silt sack to a new location without further compensation,** which unit price shall include full compensation for all labor, materials, tools, equipment and all incidental work necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 3****Item 3 - EXCAVATION OF EXISTING WALKWAY & DRIVEWAY PAVEMENTS &  
RELATED SOIL MATERIAL****Description**

(a) Under this item excavation **shall not include any material generated under the reclamation of roadway process, nor for any excess material generated by a ‘zipper’ milling process when such an operation is specified, nor shall this item apply to any excess material which is otherwise included under the basis of payment for any other item**, but shall otherwise be for the excavation and disposal thereof to subgrade for the removal of walkway pavements, driveway apron & driveway affiliated pavements and/or any related soil materials which have been authorized by the Engineer for removal and disposal for the purpose of constructing and/or reconstructing paved walkway and/or driveway surfaces, and such excavation shall be limited to the actual excavated original in-place volume of each excavated area, however **in no case is the excavation to exceed such depths specified by the Engineer. This is especially important as no over-excavation of existing soils will be paid for when, in the opinion the Engineer, the existing base is deemed to be adequate and is designated by the Engineer to remain.**

(b) The Contractor is not to refill any excavated area until such time as he has notified the Engineer that such excavation has occurred, and is to further work with the Engineer to verify the depth and breadth of the excavated area(s). Only confirmed and verified quantities shall be paid.

(c) Excavation shall include existing pavements whatever their nature may be, peat, mud, vegetation, brush, and anything else to be removed which is not specifically covered under any other item.

**Method of Construction**

(d) In the event that the Engineer decides that the material encountered at or below subbase is unsuitable material on which to build the pavement surface, then the Contractor shall excavate to such greater depths as the Engineer may decide and no extra compensation shall be allowed other than the regular unit price quoted in the proposal for excavation under this item.

(e) If in the opinion of the Engineer the existing material encountered in the base course is suitable material on which to lay the pavement, then the Contractor shall excavate only such portions as are designated and only the actual amounts of excavation shall be paid for regardless of the depth involved.

(f) In normal excavation where the subbase is to be a specified depth below finished grade, the excavation shall be done in such a manner that the subbase shall be the prescribed depth below and parallel to the finished grade. In the case where extra excavation or below grade excavation is necessary, these excavations shall be refilled to subbase grade. In the case where the excavation is to be less than the specified depth, the subbase shall be left in an evenly graded condition. All work mentioned in this paragraph shall be done before the gravel base course is installed.

(g) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers.

Method of Construction (Continued)

(h) Compaction of all granular or asphalt layers shall be carried on until the density of the material is not less than ninety-five (95) per cent of the Standard Proctor Density as determined by Standard Laboratory Compaction Test. At the direction of the Engineer the Contractor shall arrange and pay for and submit to the Engineer results of such tests taken in such number as to indicate a test of every eight hundred (800) square feet of compacted area with successful tests proving that the 95% compaction requirement has been achieved will be paid for under Item 57

Method of Measurement

(i) Measurements taken for payment of excavation under this item shall be by the **cubic yard** measured in place before excavation operations or shall conform to the payment lines as otherwise specified herein and as approved by the Engineer during the course of the construction activities.

Basis of Payment

(j) Under **Item 3** the Contractor will be paid the contract unit price **per cubic yard** for the authorized and verified excavation and disposal of walkway and/or driveway affiliated pavements and/or any related soil material(s) authorized or directed by the Engineer for removal and/or any other existing materials **not otherwise covered under a separate item**, which unit price shall be full compensation for all labor, tools, equipment and all incidental work necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

(k) The Contractor is advised that this item **does not apply to reclamation material** which is covered under separate item(s).

**SECTION 3****Item 4 – EXPLORATORY EXCAVATION****Item 5 – UNSUITABLE MATERIAL EXCAVATION IN TRENCHES (WITH DISPOSAL)**Description

(a) When in the opinion of the Engineer, or as shown on the plans, it is deemed necessary to excavate a portion of the work site to create test pits or to make investigative access holes, the Contractor shall be paid under **Item 4**. In the event unsuitable material is encountered, and is verified by the Engineer, the Contractor shall excavate & dispose of the material under **Item 5**.

(b) If in the opinion of the Engineer the excavated material (excluding pavement material) is deemed unsuitable for re-use, the excavated material shall be replaced with material under **Item 9, 10,11 or Item 12**, whichever is applicable.

Method of Construction

(c) All applicable portions of **Section 6** pertaining to excavation, backfilling and/or compaction requirements, shall apply.

(d) No backfill is to contain any type of pavement material.

(e) All undesirable material(s) are to be disposed of by the Contractor at his own expense, however the balance of the material needed to refill the trench shall be paid under **Item 9, 10,11 or Item 12**, whichever is applicable.

Method of Measurement

(f) Measurements taken for payment of exploratory excavation and/or unsuitable material(s) excavation shall be by the **cubic yard**, and shall be to such depths, and to such widths as approved by the Engineer or are otherwise defined by the payment lines as shown on the plans or construction details. No payment for extra excavation beyond these limits shall be made.

Basis of Payment

(g) Under **Item 4** the Contractor will be paid the contract unit price **per cubic yard** for exploratory excavation and all incidental work necessary to remove and subsequently backfill the trench opening with the original trench material (except that no pavement material shall be used), which unit price shall include full compensation for all labor, materials, tools, equipment, as complete the work under this item as shown on the plans or construction details, as directed by the Engineer, and as specified herein.

(h) Under **Item 5** the Contractor will be paid the contract unit price **per cubic yard** for excavating and disposing of all undesirable material(s), which unit price shall include full compensation for all labor, materials, tools, equipment, as complete the work under this item as shown on the plans or construction details, as directed by the Engineer, and as specified herein.

(i) Material needed to refill the trench shall be paid under **Item 10, 11 or Item 12**, whichever is applicable.

**SECTION 3****Item 6 – ROCK EXCAVATION****Description**

(a) Under **Item 6** the General Contractor shall do all the rock excavation necessary to complete all work called for in this contract as shown on the plans, as directed by the Engineer, and as specified herein.

(b) No soft, loose or broken rock, impacted boulders, or hard pan, but only such solid rock as may be approved by the Engineer in advance as requiring blasting for its removal, or if blasting is not acceptable, then by power tools, shall be considered as rock excavation. Boulders one-half (1/2) cubic yard or more in volume shall be included in this item.

**Method of Construction**

(c) In all rock excavation it is especially provided that the blasting be done with all possible care so as to avoid injury to persons and property; that the rock shall be well covered, and sufficient warning shall be given to all persons in the vicinity of the work before blasting; that great care shall be taken to avoid injury to gas and water pipes, sewers, drains or other structures; that caps or other detonators shall not be kept in the same place in which dynamite or other explosives are kept; and not more than one hundred (100) pounds of explosives shall be stored in the vicinity of the work at any time, except by special permission of the Engineer; and that no blasting shall be done on Sunday; and on weekdays blasting shall not be done between the hours of 3:00 P.M. and 8:00 A.M., except by special permission of the Engineer. The Contractor shall observe all the regulations of the Department of Public Safety of the Commonwealth of Massachusetts, and all City ordinances relating to the storage and handling of explosives, as required by **Article 18**. The Contractor shall conform to any further regulations that the Engineer may deem necessary in this respect.

(d) Blasts are to be covered with suitable mats or with heavy timbers chained together, if required, or both.

**Method of Measurement**

(e) Measurements taken for payment shall be taken by the **cubic yard**. Trench rock excavation shall be based upon very specific depth and sidewall limits conforming to the payment lines shown in the City of Newton General Construction Details.

**Basis of Payment**

(f) Under **Item 6** the Contractor will be paid the contract unit price **per cubic yard** for rock excavation in drain, water, and/or sewer trenches and rock excavation in roadway and parking areas, which unit prices shall be full compensation for all labor, tools, equipment and all incidental work necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein and in accordance with the payment lines as shown in the City of Newton General Construction Details.

**SECTION 3****Item 7 --REMOVE EXISTING DRAIN STRUCTURE (BEYOND 6' LOCUS)****Item 8 – REMOVE EXISTING DRAIN LATERAL (BEYOND 6' LOCUS)****Description**

(a) The work under **Item 7** shall consist of the removal and stacking of reusable iron castings or the disposal of all castings not deemed to be acceptable by the Engineer, for the complete removal and disposal of the drain structure, as well as all deleterious material contained therein, and for the backfill material and its subsequent compaction. This work applies only to structures whose existing centerpoints lie more than six (6) feet away from the centerpoint of any newly installed structure.

(b) The primary intent of the work under **Item 8** shall consist of the complete removal and disposal of any vitrified clay, and/or unreinforced cement concrete pipe, and/or any other type of pipe which is deemed by the Engineer to be 'fragile' or problematical in nature. The removal of the 'fragile' drain lateral pipe shall be to a depth such that any section of any 'fragile' drain lateral pipe which lies within three (3) vertical feet of the finished grade, as well as all deleterious material contained therein, is completely removed from the ground. This work shall also include the plugging of all apertures, and for the backfill material and its subsequent compaction. This work only applies to drain lateral pipes whose existing centerlines lie more than six (6) feet away from the centerline of any newly installed drain lateral pipe.

**Materials**

(c) Reclamation material shall be used as the primary backfill material, however, in the event reclamation material is not available at the time of the abandonment then the Contractor shall, upon approval by the Engineer, backfill with gravel that shall conform to **Section 6** of these specifications

(d) Brick shall conform to **Section 6, Item 15, paragraph (f)**, of these specifications.

(e) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(f) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

**Method of Construction**

(g) Existing castings of a quality acceptable to the Engineer shall be carefully removed. They shall be satisfactorily stored and protected until they are required for reuse. Surplus castings which meet current City of Newton standards, but which are not needed on the site, shall be delivered, off-loaded and neatly stockpiled by the Contractor at the City of Newton Elliot Street yard. Unsuitable castings shall be disposed of under this item.

(h) The entire drain structure and/or drain lateral pipe shall be carefully removed and all structural components, as well as all deleterious material, is to be placed directly on trucks and is to be immediately disposed of at a legal dumping site at the Contractors own expense.

Method of Construction (Continued)

(i) All inlet apertures caused by the removal of drain lateral pipes shall be plugged with solid hard clay sewer brick and mortar masonry which is to be no less than eight (8) inches in thickness and which shall not extend into either the chamber or into the trunk line pipe into which the original pipe was fitted. This work is to be performed in the presence of the Engineer and his instructions and/or decisions shall be abided by.

(j) The trench and/or aperture shall be completely excavated and subsequently filled with selected suitable existing material, or shall otherwise be backfilled with gravel as approved by the Engineer, which shall be placed in six (6) inch layers and thoroughly compacted to 95% density with approved pneumatic tamping bits and/or rammer type compactors.

Basis of Payment

(k) Under **Item 7** the Contractor will be paid the contract unit price for **each** drainage structure removed, which unit price shall include full compensation for all labor, material, tools and equipment and all incidental work necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein including the disposal of all unsuitable and/or excess material(s).

(l) Under **Item 8** the Contractor will be paid the contract unit price per **linear foot** of drain lateral removed, which unit price shall include full compensation for all labor, material, tools and equipment and all incidental work necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein including the disposal of all unsuitable and/or excess material(s).

(m) Gravel furnished from off the site and used to backfill the abandoned aperture shall, if pre-approved by the Engineer, be paid under **Item 11**.



**SECTION 4****Item 9 – FURNISH & PLACE ¾” FRACTURED CRUSHED STONE  
(PRIMARILY FOR SEWER BEDDING)****Description**

(a) The work to be done under this item consists of furnishing and placing crushed stone for refilling extra excavation(s) when ordered by the Engineer, or to otherwise construct the leaching well around and about the base of hydrants, for the bedding of pipes, or for any other end use as the Engineer may direct. **The excess material displaced by the stone shall be excavated and disposed of under this item.**

**Materials**

(b) Crushed stone shall consist of clean, hard, tough, durable ledge rock, free from soft, thin, elongated, friable or laminated pieces, disintegrated stone, vegetable or other deleterious matter, and shall have a percentage of wear as determined by the Los Angeles Abrasion Test (A.A.S.H.T.O. Standard Method T96-49) of not more than thirty-five (35) per cent. The stone shall be thoroughly screened and the resulting material conforming to the gradation for three-quarter (¾) inch to one and one-quarter (1-¼) inch uniformly graded in size and quality, angular and free from rounded surfaces.

**Method of Measurement**

(c) Measurement taken for **Item 9** shall be by **the ton** for reasonably dry material as delivered to the site. The Contractor shall furnish the Engineer with receipts from the plant showing the weight of each load of fractured stone material which is furnished and placed, however the Engineer reserves the right to adjust payment in the event the volume of material is either not entirely used, and/or the material is excessively wet and/or the shipment has arrived on the site already partially used.

(d) Limits and payment lines have been established and are shown on the General Construction Details or are otherwise may be superceded by the site specific details as shown on the plans. No payment for crushed stone or screened gravel furnished and placed beyond these limits will be paid for unless specifically authorized by the Engineer.

(e) While the size of crushed stone may vary from three-quarter (¾) inch to one and one-quarter (1-¼) inch, the unit price named shall be for the stone used regardless of size.

**Basis of Payment**

(f) Under **Item 9** the Contractor will be paid the contract unit price **per ton** for crushed stone complete-in-place. The unit price shall include full compensation **for all excavation and disposal of existing material**, and for all labor, tools, equipment, and all incidental work necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 5****Item 10 – TYPE 1E CONTROLLED DENSITY FILL ('FAST SET' & EXCAVATABLE)  
(SUPPLEMENTAL ONLY. NOT FOR CURB WORK)****Description**

(a) The work to be done under this item consists of the excavation and disposal of existing site material(s) and subsequently furnishing and placing Controlled Density Fill (CDF) to refill trenches as shown on the plans and/or directed by the Engineer.

**Materials**

(b) Type 1E Controlled Density Fill (CDF) shall be of the excavatable 'fast-set' type and shall conform to the requirements of Section M4.08.0 of the Commonwealth of Massachusetts Standard Specifications for Highways and Bridges, Dated 1988, and shall further comply with the following;

- The set-time (from installation to initial cure) shall be from one (1) to two (2) hours.
- The CDF material shall have a slump of eight (8) to eleven (11) inches.
- CDF-FE composition shall be as follows:

Product	Weight	Specific Gravity	Volume (Cubic Feet)
Cement	60	3.15	0.28
Fly Ash		2.3	0
Sand	2800	2.62	17.0
Air		12%	3.24
Water	406	1.0	6.52

- The unconfined compressive strength target shall be one hundred (100) psi at ninety (90) days.
- Any excessive run-off is to be controlled by the Contractor so as to totally eliminate icing conditions, nuisance dusts, spatters, drain system contamination, or any other adverse condition as determined by the Engineer.

**Method of Measurement**

(c) CDF will be measured by the **cubic yard** complete-in-place.

**Basis of Payment**

(d) Under **Item 10** the Contractor will be paid the contract unit price **per cubic yard** for controlled density fill complete-in-place which unit price shall include full compensation for all labor, tools, equipment, and all incidental work necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein, **inclusive of the excavation and disposal costs associated with the removal of existing material(s).**

(e) **CDF for curb embedment is NOT paid for under this Item.**

**SECTION 6****Item 11 - GRAVEL FURNISHED FROM OUTSIDE THE SITE FOR GENERAL USE****Item 12 - DENSE GRADED CRUSHED STONE (SUPPLEMENTAL)****Description**

(a) Except for the gravel or dense graded crushed stone included as work to be done under other items all gravel or dense graded crushed stone used to complete the work called for in this contract shall be furnished from an off-site source and shall be subsequently placed under these items, as directed by the Engineer.

(b) The depths of dense graded crushed stone and gravel in (non-reclamation) roadway base course for various depths of bituminous concrete pavements are as follows: Four (4) inches of dense graded crushed stone over six (6) inches of gravel for two and one-half (2-1/2) inch pavements, four (4) inches of dense graded crushed stone over eight (8) inches of gravel for four (4) inch pavements, and six (6) inches of dense graded crushed stone over the undisturbed sub-grade for five and one-half (5-1/2) inch pavements, or as directed by the Engineer.

**Materials**

(c) All gravel shall be run of the bank gravel containing no stone larger than three (3) inches in diameter and shall be free from roots, or other foreign matter, but having a binding quality that will compact to a ninety-five (95) per cent compaction requirement. Dense graded crushed stone shall conform to Division III, Materials, subsection M2.01.7 of the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highway and Bridges, dated 1988. All gravel and dense graded crushed stone shall be subject to the approval of the Engineer. **All subsequent references to gravel in this section shall also apply to dense graded crushed stone.**

**Method of Construction**

(d) The gravel shall be spread from self-spreading vehicles, or with power graders of approved types or by hand upon the prepared sub-base. Care shall be taken while spreading the gravel to rake forward and distribute the largest stone, so that they will be at the bottom of the gravel course and be evenly distributed.

(e) The gravel so placed shall be thoroughly rolled true to the lines and grades, as directed, with a self-propelled three (3) wheeled roller or tandem roller weighing not less than twelve (12) tons until it presents a firm, stable and unyielding surface, and until it ceases to creep under the wheels of the roller. Any depressions that appear during or after rolling shall be filled with gravel and re-rolled until the surface is true and even.

(f) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers.

(g) Compaction shall be carried on until the density of the material is not less than ninety-five (95) per cent of the Standard Proctor Density as determined by Standard Laboratory Compaction Test. The Contractor shall arrange and pay for and submit to the Engineer results of such tests taken in such number as to indicate a test of every eight hundred (800) square feet of compacted area.

Method of Construction (Continued)

- (h) No lift of freshly placed material shall exceed twelve (12") in depth.
- (i) The gravel base course shall be fine graded and rolled to a true grade, the prescribed number of inches in depth, and parallel to the finished grade of the roadway. The Contractor shall, when the Engineer orders to do so, place iron pins or stakes along the centerline, and both gutter lines or wherever he may decide, and mark the necessary grades thereon. The Contractor shall supply all the labor and material necessary.

Method of Measurement

- (j) Measurement taken for **Item 11** shall be by the **ton** for reasonably dry material as delivered to the site and which is subsequently placed. The Contractor shall furnish the Engineer with receipts from the plant showing the weight of each load of reasonably dry gravel material which is furnished and placed, however **the Engineer reserves the right to adjust the payment in the event the volume of material is either not entirely used, and/or the material is excessively wet, and/or the shipment has arrived on the site as already partially used.**
- (k) Measurement taken for **Item 12** shall be by the **ton** for reasonably dry material as delivered to the site and which is subsequently placed. The Contractor shall furnish the Engineer with receipts from the plant showing the weight of each load of reasonably dry dense graded material which is furnished and placed, however **the Engineer reserves the right to adjust the payment in the event the volume of material is either not entirely used, and/or the material is excessively wet, and/or the shipment has arrived on the site as already partially used.**

Basis of Payment

- (l) Under **Item 11** the Contractor will be paid the contract unit price **per ton** for furnishing and placing gravel, which unit price shall include full compensation for all labor, materials, tools and equipment, and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.
- (m) Under **Item 12** the Contractor will be paid the contract unit price **per ton** for furnishing and placing dense graded crushed stone, which unit price shall include full compensation for all labor, materials, tools and equipment, and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 7****Item 13 - FURNISH, TRENCH & LAY 8-INCH SDR 35 PVC SEWER PIPE**Description

(a) The Contractor shall furnish, trench and lay, complete-in-place (exclusive of crushed stone bedding) 8-inch PVC sewer pipe, of the type shown on the plans, as directed by the Engineer and as specified herein. The use of pipe lasers is required in the installation of all sewer mains to control both the gradient and the alignment of the proposed sewer system. The use of conventional auto-levels and related equipment is required in the installation of all sewer house connections to control both the gradient and the alignment of the proposed service system.

(b) Unless otherwise covered under separate and specific items the furnishing, trenching and laying of the PVC sewer pipes **shall include all excavation (excepting rock excavation or unsuitable excavation), disposal of any excess material(s), and for the backfilling** for pipes and manholes to the grades shown on the plans. All such excavation (excepting rock excavation) shall be unclassified and shall include all material to be excavated regardless of what the nature of the material may be. Furnishing, trenching and laying items shall include the removal of trees, shrubs, plants, roots, etc., and the refilling of the trench and removal and disposition of surplus material. These items shall include the furnishing, placing and removal of all sheathing not left in place, all bridging and fencing and the removal of the same unless otherwise required by the Engineer, all pumping, bailing, dewatering the water table if necessary to lay the pipe on a dry firm bedding, or otherwise disposing of water through underdrains or otherwise; the furnishing and placing of all temporary underdrains used by the Contractor for the disposal of water; the proper handling of all sewage, storm water or flow in existing adjacent sewers, surface drains, underdrains, water mains and service pipes or other conduits or upon the surface of streets or lands; the building and the removal of all temporary pipe lines and bulkheads; the removal and replacing of such portions of existing structures as may be necessary to make proper connections with the new work; the removal, where necessary, of pipes, conduits, sewers, underdrains, drains, manholes, catch-basins, and similar existing structures, together with their contents, and including stonework, woodwork, ironwork, cemented stone, brick masonry, interior bracing, foundations and piling; all protection and restoration of buildings, walls, fences, water mains and service pipes and other existing structures; the restoration and resurfacing of the trenches (unless specifically covered under other items), accommodation, protection and restoration of travel, and all other incidental work inclusive of providing final as-built ties and plans.

(c) The following abbreviations may be used in these Specifications:

AASHTO	-The American Association of State Highway & Transportation Officials
ACI	-American Concrete Institute
ANSI	-American National Standards Institute
ASCE	-American Society of Civil Engineers
ASTM	-American Society of Testing Materials
AWS	-American Welding Society
AWWA	-American Water Works Society
FED.SPEC.	-Federal Specifications
DIPRA	-Ductile Iron Pipe Research Association
NEWWA	-New England Water Works Association

Description (Continued)

- (d) Where reference is made to a specification by one of the above mentioned or other associations, it is understood that the latest revisions thereof shall apply.
- (e) In case of conflict, this specification shall take precedence over the above noted specifications.

Materials

- (f) The SDR 35 Polyvinyl Chloride (PVC) pipe and pipe fittings shall conform to ASTM D-3034, SDR 35, with integral wall, bell and spigot joints. The pipe shall be colored green for in-ground identification as sewer pipe.
- (g) The SDR 35 PVC pipe shall be made of PVC resin compound conforming to ASTM D-1784. The locked in rubber sealing gasket shall conform to ASTM D-3212 - "Joints for Drain and Sewer Pipes using flexible elastomeric seals" and ASTM F-477. Spigot ends of the pipe shall be supplied from the factory with bevels. The majority of the pipe shall be furnished in standard 13-foot lengths, but enough random lengths may be provided to allow for connection to manholes and the installation of service laterals. Each end of random length of pipe shall be furnished in lengths of not less than two (2) feet unless otherwise approved by the Engineer.
- (h) The SDR 35 PVC pipe fittings and accessories shall be as manufactured and furnished by the pipe supplier, and shall conform to ASTM D-1784, and shall have bell and/or spigot configuration compatible with that of the pipe. Wyes, tees, bends, caps and adapters, and any other fittings required shall be provided.
- (i) Pipe shall be marked along the outside of the barrel in bold style type and shall indicate the manufacturer's name, pipe size, PVC compound used, and the ASTM material specifications for the PVC compound used; i.e. ASTM D-1784.
- (j) The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commercially practical in color, opacity, density and other physical properties.
- (k) No substitution for the materials specified shall be allowed unless the substituted materials are shown to be equal in all respects to the materials specified.
- (l) All materials shall conform to these specifications and to such further specifications as shown on the plans.

Method of Construction

- (m) When ordering pipe and fittings, the Contractor shall make arrangements with the supplier to furnish the services of a qualified instructor representing the manufacturer. At the start of pipe-laying operations, the instructor shall spend as much time on the work as may be necessary instructing the Contractor's men in the correct methods of handling, cutting, laying, and jointing the pipe. Thereafter, all such work shall be done in accordance with the recommendations of the manufacturer and the instructor.
- (n) Upon delivery, all pipe and fittings shall be subject to thorough inspection and tests by the Engineer, the right being reserved for him to apply such of the tests specified as he may deem necessary from time to time. The Contractor shall furnish all labor necessary to assist the Engineer in inspecting the pipe and fittings. All necessary tests shall be at the Contractor's expense.

Method of Construction (Continued)

- (o) Care shall be taken in handling and laying pipe to avoid damage to the PVC gravity sewer pipe. Any pipe which, before or after installation, is cracked or which has received a severe blow which might have caused an incipient fracture, shall be marked as rejected and removed at once from the work, even though no such fracture can be seen and the Engineers decision shall be final.
- (p) Immediately before being installed, each length of pipe shall be visually inspected.
- (q) The excavations are to be opened in as many places and in such lengths of section as the Engineer shall direct, and the work carried on in each place by a separate gang consisting of as many men as he shall require. The Contractor will make all excavations of sufficient widths to provide ample space for the construction of the pipe lines and manholes, for bracing, sheeting, and the removal of ground water, and shall render the bottom shall be excavated only to widths sufficient to provide working space on each side of the pipe for laying, making tight joints, and compacting the backfill around the pipes. Trench widths shall conform to the excavation sections shown on the plans or construction details.
- (r) The Contractor shall sheet and brace the sides of the excavations sufficient for proper support and prevent any movement that could cause injury to the work and to adjacent property, utilities and structures.
- (s) Excavation, bedding, bridging, and backfill shall conform to the applicable sections shown on the construction details and/or as shown on the plans.
- (t) Pipes shall only be laid with the Engineer in attendance, and are to be evenly bedded on the specially prepared bed(s) as shown on the plans or as otherwise directed. All pipe shall be “laid in the dry”, and all joints shall be made watertight. Pipe with factory-fabricated joints shall be laid in accordance with the manufacturer’s recommendations and instructions.
- (u) Pipe and fittings shall be laid with to conform to the lines and grades indicated on the drawings or as directed.
- (v) **Sewer mains shall be laid with the aid of a laser**, whereas the gradients of the sewer house connections are to be controlled and set by conventional auto-level and rod procedures, and each pipe and fitting shall be laid so as to form a close joint with the previously laid pipe or fitting and bring the inverts continuously to the required grade.
- (w) The Contractor’s attention is directed to the fact that PVC Gravity Sewer Pipe is a “flexible conduit”. The pipe shall be installed in strict accordance with ASTM Designation D-2321 “Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe” and/or in the manner as shown on the plans. If sheeting or a trench box is used, they shall not be placed below the spring line of the pipe without the approval of the Engineer. When this sheeting or trench box is removed, extreme care shall be taken so as not to disturb the previously constructed pipe bedding, haunching, and the initial backfill.
- (x) The pipe shall be placed proceeding in an upstream direction, bell end upstream to avoid slippage and facilitate grade control, unless otherwise directed by the Engineer.
- (y) When PVC pipe must be cut it shall be cut square by means of fine-tooth handsaw and a miter box according to the manufacturer’s recommendations. Roller-type cutters shall not be used. All cut ends shall be examined for possible cracks caused by cuttings. Cracked pieces shall be marked as rejected and removed at once from the work.



Method of Construction (Continued)

- (z) The pipe ends shall be beveled using a pilot beveling tool, a “cheese grater” type of hand tool, or a disc-sander with medium coarse paper. The field bevel must match the manufacturer’s factory bevel specifications.
- (aa) Suitable bell holes shall be made or left so that only the barrel of the pipe is subjected to bearing pressure from the supporting material. The pipe shall not be driven down to grade by striking it with a shovel handle, timber, rammer, or other unyielding object, but shall be brought to the exact correct grade by adjustment of the supporting material. When the pipe has been properly bedded, enough of the cradle and backfill material shall be in place and compacted between the pipe and the sides of the trench to hold the sewer in correct alignment. Concrete blocks or saddles, bricks, or large stones shall not be used to hold the pipe in alignment.
- (ab) No pipe shall be laid in water or when, in the opinion of the Engineer, trench conditions are unsuitable. Under no conditions shall the sewer laterals be utilized to drain water from excavations during the construction of any sewer system appurtenance.
- (ac) PVC gravity sewer pipe shall be jointed in strict accordance with the recommendations of the manufacturer and his installation instructor. All pipe ends shall be wiped with a clean, dry cloth around the entire circumference from the end to one inch beyond the reference mark. The spigot end is to be lubricated using lubricant supplied by the pipe manufacturer.
- (ad) The Contractor shall furnish all necessary gages to verify the correct positioning of the pipe bell, spigot and gaskets.
- (ae) No pipe shall be covered with water, screened gravel, concrete or backfill until the joints have been inspected and approved.
- (af) The Contractor shall build a tight bulkhead in the pipeline where new work enters an existing sewer. This bulkhead shall remain in place until its removal is authorized or ordered.
- (ag) Sewer house connections are to be installed as shown on the plans, and/or as field conditions necessitate.
- (ah) Where the invert of the sewer is less than ten (10) feet below the surface of the ground, eight (8) inch by six (6) inch PVC wyes and 45° elbows shall be inserted in the main line as shown on the plans. Where the invert of the sewer is greater than ten (10) feet below the surface of the ground, chimneys shall be built. Open end of the pipe and branches shall be closed with airtight stoppers or caps secured in place in a approved manner.
- (ai) Where complete sewer services are to be installed, connection to the existing pipe at the house shall be made with a suitable adapter as approved by the Engineer
- (aj) Where house services are to be terminated at property lines a 6-inch nipple no less than six (6) inches nor more than two (2) feet in length shall be installed with a airtight cap.
- (ak) Except as may be necessary in placing and tamping the backfill, no walking on or working over the pipe will be permitted until the trench has been backfilled to a depth of one (1) foot above the top of the pipe.



Method of Construction( Continued)

(al) At all times, care shall be taken to prevent earth, water, and other materials from entering the pipes through open ends, branches, or manhole openings. When work at an opening is suspended, the opening shall be closed with a airtight stopper or other suitable closure until the resumption of work.

(am) In backfilling the Contractor shall use great care in the selection and placing of the fill around the pipe. **The fill around the pipe shall be crushed stone** and then subsequently selected earth materials which are to be free from frozen lumps. The fill around the pipes shall be placed by hand shovel and thoroughly compacted with suitable pneumatic rammers or powered hand tampers as fast as placed, up to a level of twelve (12) inches above the top of the pipe. The remainder of the trench shall be filled and compacted by mechanical equipment sufficient to ensure against subsequent settlement. In backfilling trenches with rock fragments, enough earth shall be used in conjunction with the rock to fill the voids and shall be tamped in place to the satisfaction of the Engineer. No heavy stones or large masses of earth, as from a power machine, shall be dropped into the trench in such a manner as to endanger the pipe. The materials used for backfilling in street trenches, for a depth of one (1) foot above the top of the pipe, shall be selected portions of the excavated materials free of fractured rock larger than three (3) inches in diameter, and shall be, where possible, strictly of gravel. However, if directed, the entire material for filling shall consist of gravel.

(an) The sewer system is to be watertight, and **if within one (1) year after completion**, leaks have developed, they shall be repaired at the expense of the Contractor and to the satisfaction of the Engineer.

(ao) The Contractor must perform leakage tests using an approved low air pressure testing system.

(ap) All leakage testing shall be done under the direct supervision of the Engineer, and all test criteria shall be approved by the Engineer. Any pipe which fails the leakage test shall be replaced by the Contractor at his own expense.

(aq) Upon completion of the work, the Contractor shall thoroughly clean and flush the pipe lines, and all pipe liens shall be subjected to a mirror inspection by the Contractor and the Engineer jointly. Any pipe showing settlement after laying or which is not in true alignment shall be taken up and re-laid by the Contractor without additional compensation.

(ar) The Contractor is to take as-built location ties as the work progresses and is to provide a final as-built plan of the entire sewer system upon completion of the project. Ties are to be taken to all pipe junctures, pipe termination points, manholes, angle points, or to any other sewer system and/or other utility fixture which the Engineer deems necessary in order to establish an accurate permanent record of important points of information. Ties are to be delivered to the Engineer as often as he may call for them in order to preserve their safe-keeping. Ties are also to be taken under the direct supervision of the Engineer, and in a manner, and on a format, acceptable to him. Further, the final as-built plan is to contain invert elevations for all installed manholes, invert elevations at the termination point of all sewer house connection stubs, as well as a final alignment plan. The final as-built plan is to be provided to the Engineer in a manner, and on a format, acceptable to him.

Method of Measurement

(as) Measurement for payment under **Item 13** shall be the horizontal distance measured by the linear foot along the pipe in place, and the distance shall run from the center of manhole to center of manhole. Where the pipe terminates in structures other than manholes, the distance shall be taken to the inside wall face of the structure.

Basis of Payment

(at) Under **Item 13** the Contractor will be paid, subsequent to an acceptable pressure test, the contract unit price **per linear foot** of eight (8) inch PVC sewer pipe of the type shown on the plans and as specified herein, **which unit price shall include full compensation for all excavation and the disposal of all unclassified material**, and for all labor, materials, tools and equipment and all incidental work, necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein, inclusive of as-built ties and plans.

(au) Crushed stone bedding shall be paid under **Item 9**.

(av) Sewer Manholes and castings shall be paid for under **Item 15** and **Item 21** respectively.

(aw) Pressure testing of the pipe shall be paid for under **Item 20**.

**SECTION 8****Item 14 - FURNISH, TRENCH & LAY 10-INCH DUCTILE IRON DRAIN PIPE (CLASS 52)****Description**

(a) The Contractor shall furnish, trench and lay, complete in place, ductile iron pipe of the sizes specified on the plans. All pipe drain shall be laid in the location as shown on the plans, as directed by the engineer and as specified herein.

(b) Furnishing, trenching and laying items shall include all excavation and backfill (except rock excavation) for pipes and manholes to the grades shown on the plans. All such excavation (except rock excavation) shall be unclassified and shall include all material to be excavated regardless of what the nature of the material may be. Furnishing, trenching and laying items shall include the removal of trees, shrubs, plants, roots, etc., and the refilling of the trench and removal and disposal of all lumber not left in place, lumber left in place, all bridging and fencing and removal of same unless otherwise required by the Engineer, all pumping, bailing or otherwise disposing of water through underdrains or otherwise; the furnishing and placing of all temporary underdrains used by the Contractor for the disposal of water; the proper handling of all sewage, storm water or flow in existing adjacent sewers, surface drains, underdrains, water mains and service pipes or other conduits or upon the surface of streets or lands, the building and the removal of all temporary pipe lines and bulkheads, the removal and replacing of such portions of existing structures as may be necessary to make proper connections with the new work; the removal, where necessary, of pipes, conduits, sewers, underdrains, drain, manholes, catch-basins and similar existing structure, together with their contents, and including stonework, woodwork, ironwork, cemented stone, brick masonry, interior bracing, foundations and piling; all protection and restoration of buildings, walls, fences, water mains and service pipes and other existing structures; the restoration and resurfacing of the trenches (except in paved streets which are covered by other items), accommodation and protection of travel and all other incidental work.

(c) These items shall include the furnishing and installing of bends, tees, stoppers, wyes or any other special fittings needed to complete the work.

**Materials**

(d) Ductile Iron Pipe shall be Class fifty-two (52) and shall conform to the requirements of ASA A21.50-1965 (AWWA C150-65) American Standard for the thickness design of Ductile Iron Pipe and ASA A21.51-1965 (AWWA C151-65) American Standard for Ductile Iron Pipe centrifugally cast in metal molds or sand-lined molds for water or other liquids.

(e) All pipes shall be subject to inspection at the site of work by the Engineer. The purpose of the inspection shall be to cull and reject pipes which, independent of the physical tests, fail to conform to the above specifications in the particulars of dimensions, mixing, molding honeycomb, blisters, cracks, fractures, spalls or position of reinforcement.

Method of Construction

(f) The excavations are to be opened in as many places and in such lengths of section as the Engineer shall direct, and the work carried on in each place by a separate gang, consisting of as many men as he shall require. The Contractor shall make all excavations of sufficient widths to provide ample space for the construction of the pipe lines and manholes for bracing, sheathing and the removal of ground water and shall render the bottom of the excavation firm and dry and acceptable in all respects. The trench at the bottom shall be excavated only to widths sufficient to provide working space on each side of the pipe for laying, making tight joints and compacting the backfill around the pipes. Trench widths shall conform to the excavation sections shown on the plans or construction details.

(g) The Contractor shall sheath and brace the sides of the excavations sufficient for proper support and prevent any movement that could cause injury to the work, adjacent property, utilities and structures.

(h) Before any pipe is placed in a newly constructed fill, the Contractor shall, as directed, place the filling two (2) feet above the proposed flow line of pipe. A trench shall then be excavated for the placing of pipe.

(i) Pipes shall be laid under the personal supervision of the Engineer in charge of the work, and are to be evenly bedded on an especially prepared bed shaped to fit the barrel of the pipe. The pipe shall be laid true to the specified lines and grades. The bell end shall be toward the rising grade and each section of pipe shall have a firm bearing throughout its length. Where rock in either ledge or boulder formation is encountered, it shall be removed six (6) inches from any portion of the pipe. Rock excavation shall be done and paid for under **Item 6**.

(j) In backfilling the Contractor shall use great care in the selection and placing of the fill around the pipe. The fill around the pipe shall be selected earth materials free from frozen lumps and free from stones having a diameter of more than three (3) inches. The fill around the pipes shall be placed by hand shovel and thoroughly compacted with suitable pneumatic rammers or powered hand tampers as fast as placed, up to a level of one (1) foot above the top of the pipe. The remainder of the trench shall be filled and materials compacted by mechanical equipment sufficient to insure against subsequent settlement. No heavy stones or large masses of earth, as from a power machine, shall be dropped into the trench in such a manner as to endanger the pipe. The materials used for backfilling in street trenches, for a depth of one (1) foot above the top of the pipe, shall be selected portions of the excavated materials and shall be, wherever possible, gravel. If directed, the entire material for filling shall consist of gravel. The work shall be watertight, and if within one (1) year after completion, leaks have developed, they shall be repaired at the expense of the Contractor and to the satisfaction of the Engineer.

(k) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers.

(l) Compaction shall be carried on until the density of the material is not less than ninety-five (95) per cent of the Standard Proctor Density as determined by Standard Laboratory Compaction Test. The Contractor shall arrange and pay for and submit to the Engineer results of such tests taken in such number as to indicate a test of every eight hundred (800) square feet of compacted area.

(m) Upon completion of the work, the Contractor shall thoroughly clean and flush the pipe lines and all pipe lines shall be subject to a inspection by the Contractor and Engineer jointly. Any pipe showing settlement after laying or which is not in true alignment shall be taken up and relaid by the Contractor without additional compensation.

Method of Measurement

(n) Measurement for payment shall be the horizontal distance measured by the **linear foot** along the pipe in place, and the distance shall run from center of drainage structure to center of drainage structure or to the ends of pipe(s) when pipes do not begin or end at manholes or catch-basins.

Basis of Payment

(o) Under **Item 14** the Contractor will be paid the contract unit price per **linear foot** of ductile iron pipe of the size specified, complete-in-place, including bends, tees, stoppers, wyes, or any other special fittings. The unit price shall include full compensation for all labor, material, tools, equipment and all incidental work necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein inclusive of the disposal of all excavated surplus material.

**SECTION 9****Item 15 - PRECAST CONCRETE SEWER MANHOLE (EXCLUDING COVER & FRAME)****Description**

(a) Standard precast cement concrete sewer manholes and special sewer manholes shall be built where shown on the plans and where directed by the Engineer.

**Material**

(b) Precast Class A cement concrete manholes shall conform to the following criteria:

Concrete strength f'c 4,000 PSI @ 28 days. Density 150 PCF.

Cement shall be Portland Type I or III per ASTM C150-81.

Admixtures, air & plasticizers per ASTM C150-81

Reinforcing shall be per ASTM A615 for wire fabric.

Design loading per AASHTO HS20-44, ACI 318-83; ASTM C478-82, C890-82, C913-71.

Construction joints are to be sealed with compressible butyl asphalt gasket material to render fully watertight connections.

The weight of the structure shall be approximately 875 pounds per vertical foot.

Bases of the manholes shall be of the extended type having a non-settling flanged foot.

Steps shall be co-polymer Polypropylene Plastic with a core of ½" Grade 60 steel reinforcement.

(d) All pipe access apertures shall be provided with a flexible connector which shall be integrally cast into the structure, and which shall be provided with a stainless steel clamp in order to render an airtight and watertight connection.

(e) Precast cement concrete manholes shall comply with the details shown on the plans, or as otherwise shown in the City of Newton General Construction Details.

(f) All brick used in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(g) Cement shall be air entrained and shall conform to the requirements of A.S.S.H.T.O. Designation M134-48, Type IA to IIA.

Material (Continued)

- (h) Sand shall be composed of clean, hard, durable and impermeable particles resistant to wear and frost and free from injurious amounts of organic matter, loam, clay, salts, mica and weak grains.
- (i) Coarse aggregate may be either gravel stone or crushed stone.
- (j) Water shall be clean, clear and free from deleterious amounts of oil, acid, alkali, salts and organic matter.
- (k) Class A concrete shall contain a minimum of five hundred sixty (565) pounds of cement per cubic yard of concrete and shall have a minimum compressive strength of two thousand four hundred (2400) pounds at seven (7) days and four thousand (4000) pounds at twenty-eight (28) days.
- (l) Mortar shall consist of cement and sand mixed in the proportions, by volume, of one (1) part cement and two (2) parts of sand which shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand." Lime shall not be used.

Method of Construction

- (m) Standard sewer manholes and special sewer manholes shall be built in the locations, to the dimensions, details and specifications shown on the plans or the construction details, and/or as directed by the Engineer.
- (n) The bottom slab of the manholes may be of brick or of Class A concrete, inverts and water tables shall be of brick masonry, the barrels of the manholes shall be precast extended base type reinforced Class A concrete with an integrally cast floor.

Method of Measurement

- (o) Measurements taken for payment shall be taken by **the vertical foot** as measured from the finished invert of the manhole to a point one (1) foot below the grade of the finished rim of the manhole.

Basis of Payment

- (p) Under **Item 15** the Contractor will be paid, subsequent to an acceptable pressure test, the contract unit price for each **vertical foot** of sewer manhole, complete-in-place, including the construction of the table and invert, but exclusive of the frame and cover and/or drops/"jug handles" if any, which unit prices **shall include full compensation for all excavation and disposal of excess material**, and for all labor, materials, tools, equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.
- (q) Pressure testing of the manhole shall be paid for under **Item 20**

**SECTION 10****Item 16 - DRAIN MANHOLE (EXCLUDING COVER & FRAME)****Description**

- (a) Manholes and special manholes shall be built where shown on the plans, as directed by the Engineer and as specified herein.
- (b) Standard cement concrete manholes shall be built where the depth from the surface of the ground to the proposed invert is ten (10) feet or less. Special manholes shall be built where the depth from the surface of the ground to the proposed invert is (10) feet or more.
- (c) Drain manholes may be either of two (2) types; those built of precast cement concrete and Those which are built of cement concrete blocks. The Contractor may install either of these types.

**Material**

- (d) Manholes shall comply with the details shown on the plans, or as otherwise shown in the City of Newton General Construction Details.
- (e) Drain manholes which are built of cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.
- (f)The barrels and cones of the sewer manholes must be of the precast Class A cement concrete type and are to be provided with extended reinforced base, however the bottom slab of the sewer manholes may be of brick or of the Class A precast concrete, and inverts and water tables shall be of brick masonry.
- (g)All precast cement concrete barrel and cone sections shall be Class A cement concrete and shall conform to the following criteria:

Concrete strength f'c 4,000 PSI @ 28 days. Density 150 PCF.

Cement shall be Portland Type I or III per ASTM c150-81.

Admixtures, air & plasticizers per ASTM C150-81

Reinforcing shall be per ASTM A615 for wire fabric.

Design loading per AASHTO HS20-44, ACI 318-83; ASTM C478-82, C890-82, C913-71.

Construction joints are to be sealed with compressible butyl asphalt gasket material to render fully watertight connections.

The weight of the structure shall be approximately 875 pounds per vertical foot.

Bases of the manholes shall be of the extended type having a non-settling flanged foot.

(g1) Steps shall be co-polymer Polypropylene Plastic with a core of ½" Grade 60 steel reinforcement.

(g2)All pipe access apertures shall be provided with a flexible connector which shall be integrally cast into the structure, and which shall be provided with a stainless steel clamp in order to render an airtight and watertight connection.



Materials (Continued)

(h) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

(i) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(j) Cement shall be air entrained and shall conform to the requirements of A.S.S.H.T.O. Designation M134-48, Type IA to IIA.

(k) Sand shall be composed of clean, hard, durable and impermeable particles resistant to wear and frost and free from injurious amounts of organic matter, loam, clay, salts, mica and weak grains.

(l) Coarse aggregate may be either gravel stone or crushed stone.

(m) Water shall be clean, clear and free from deleterious amounts of oil, acid, alkali, salts and organic matter.

(n) Class A concrete shall contain a minimum of five hundred sixty (565) pounds of cement per cubic yard of concrete and shall have a minimum compressive strength of two thousand four hundred (2400) pounds at seven (7) days and four thousand (4000) pounds at twenty-eight (28) days.

(o) Omitted

(p) Manholes shall be built to the dimensions, details and other specifications shown on the construction details.

(q) Section 201.62 of the Commonwealth of Massachusetts Standard Specifications for Highways and Bridges dated 1988, shall apply.

Method of Construction

(r) Manholes shall be built in the locations, to the dimensions, details and specifications shown on the plans or the construction details, and/or as directed by the Engineer.

Method of Measurement

(s) Measurements taken for payment shall be taken by the **vertical foot** as measured from the finished invert of the manhole to a point one (1) foot below the grade of the finished rim of the manhole.

Basis of Payment

(t) Under **Item 16** the Contractor will be paid the contract unit price **per vertical foot** of manhole, complete-in-place (excluding the cost of a new or reset casting), which unit prices shall include full compensation for all excavation, the disposal of all excess material, any and all pumping if required, and for all labor, materials, tools, equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.

(u) Castings (with companion cover or grate), either new, furnished by the City, or salvaged from pre-existing structures on the site, set in full mortar beds true to line and grade as directed shall be paid under **Item 21, 24 or Item 26**, whichever is applicable.

**SECTION 11****Item 17 - STANDARD SINGLE CATCHBASIN W/4' SUMP  
(EXCLUDING THE FRAME & GRATE)****Item 18 - STANDARD DOUBLE CATCHBASIN W/4' SUMP  
(EXCLUDING THE FRAME & GRATE)****Description**

(a) Under **Item 17 and 18** the Contractor shall build catchbasins, with **four (4') foot sumps**, in the locations shown on the plans, as directed by the Engineer, as shown on the General Construction Details, and as otherwise specified herein.

(b) Castings shall be set in full mortar beds true to line and grade as directed. Salvaged castings shall be transported & reset under **Item 24 or Item 26 whichever is applicable**, whereas new casting sets shall be paid for under applicable **Item 22 or Item 23**.

(c) Catchbasins are to be built of precast concrete blocks and finished with brick.

**Materials**

(d) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(e) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(f) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

(g) **(Gas trap info omitted)**

Method of Construction

(h) The dimensions of the catchbasin shall be as specified in the construction details and/or in certain rare cases, shall be specially shaped to best fit the field condition, however, special shaping must take place with the approval of the Engineer however no additional payment will be made for this effort but shall be deemed part of this item.

(i) All concrete blocks shall be laid in 1-2 cement mortar and the frame shall be set in cement mortar. Concrete block basins shall conform to the dimensions and specifications shown on the construction details. **Lime brick or cement brick will not be allowed.**

(j) Where the centerpoint of a new catchbasin structure is installed within six (6) feet of the centerpoint of an existing catchbasin, the Contractor is to fully remove and dispose of the existing catchbasin and all of its contents under this item. All existing catchbasin material, as well as its contents, are to be loaded directly on trucks and immediately removed from the site.

(k) Whenever a curb inlet/guttermouth is installed, the throat of the guttermouth opening directly behind the frame is to be left free and clear, however the seam between the bottom of the guttermouth and the top of the catchbasin structure shall be sealed with mortar.

**(l) Gas traps, when installed, shall be incorporated into the structure in such a manner to ensure that the sump can be easily accessed for the purpose of cleaning the unit. In the event the Engineer determines that this order of conditions has not been met then the Contractor shall make the necessary corrections at no expense to the City.**

Basis of Payment

(m) Under **Item 17 and 18** the Contractor will be paid the contract unit price for **each** catchbasin, or double-catchbasin respectively, **(excluding the cost of either new and/or reset castings)**, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein, inclusive of the removal and the disposal of existing catchbasins, when applicable, and all contained materials whatever their nature may be.

(n) New frames and grates shall be paid for under **Item 22 or Item 23**, whichever is applicable.

(o) Salvaged frames & grates shall be transported & reset under **Item 24**.

**SECTION 12****Item 19 - SPECIAL 'CHUTE-TYPE' DROP-INLET (EXCLUSIVE OF THE 'RECEPTOR' STRUCTURE)****Description**

(a) Special drop-inlet 'box structures' (installed over obstructions situated within the gutterline) for the purpose of funneling surface drainage into an offset/adjacent receptor catchbasin/manhole structure, shall be built in the locations shown on the plans, and/or as directed by the Engineer, as shown on the General Construction Details, and as specified herein.

(b) Grates and frames, and/or covers and frames furnished and placed by the Contractor shall be paid under applicable **Item 22 or Item 23**. Grates and frames, and/or covers and frames salvaged from the site and re-used shall be paid under **Item 24** or shall otherwise be cleaned, delivered, off-loaded and stockpiled at a City yard location as directed by the Engineer

(c) Special drop inlet catchbasins are to be built of precast concrete blocks and the top eight to twelve inches (8"—12") finished with brick.

**Materials**

(d) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(e) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(f) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

**Method of Construction**

(g) The dimensions of the special drop inlet catchbasin elements shall be as specified in the construction details and/or in certain rare cases shall be specially shaped to best fit the field condition, however, special shaping must take place with the approval of the Engineer and no additional payment will be made for this effort but shall be deemed part of this item.

Method of Construction (Continued)

(h) All concrete blocks shall be laid in 1-2 cement mortar and the frame shall be set in cement mortar. Concrete block basins shall conform to the dimensions and specifications shown on the construction details. **Lime brick or cement brick will not be allowed.**

(i) Wherever a curb inlet/guttermouth is installed, the throat of the guttermouth opening located directly behind and under the frame is to be left free and clear, however the seam between the bottom of the guttermouth, and the top of the catchbasin structure shall be sealed with mortar as applicable.

(j) Covers and frames and/or frame and grates furnished by the City and/or salvaged from existing structures, shall be set in full mortar beds true to line and grade as directed. This work shall be paid under **Item 24.**

Basis of Payment

(k) Under **Item 19** the Contractor will be paid the contract unit price for **each** special drop inlet 'box' structure **(excluding the cost of new and/or reset castings)**, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 13****Item 20 – VACUUM & PRESSURE TESTING OF (NEW) SEWER SYSTEM COMPONENTS****Description**

- (a) Under this item the Contractor shall have a series of either air or vacuum pressure tests, whichever is applicable, performed on all installed sewer system components.
- (b) These tests are to be performed with equipment, and by an individual, approved by the Engineer.

**Testing**

- (c) PVC Sewer pipe, inclusive of sewer connection stubs, shall be air tested in the following manner (Reference ASTM C-828-90):
- (1) Plug all openings in test section.
  - (2) Add air until internal pressure of line is raised to five (5) psi, allowing pressure to stabilize for no less than five (5) minutes.
  - (3) Reduce pressure to four and one-half (4.5) psi.
  - (4) If pressure drops more than one half (.5) psi within one (5) minutes, the test fails.
  - (5) In the event of failure the Contractor is to take remedial action after which time the test is to be repeated until satisfactory results are attained.
- (d) Sewer manholes shall be vacuum tested in the following manner (Reference ASTM C1244 M93):
- (1) It is recommended that this test be conducted prior to the building of the invert.
  - (2) Place the test head at the top of the sewer manhole per the manufacturers recommendation.
  - (3) Draw a vacuum of five (5) psi (35kpa of mercury). With the valve on the top of the vacuum line of the test head closed, and the vacuum pump shut off, measure the time it takes for the vacuum to drop to four and one half (4.5) psi.
  - (6) If the vacuum drops below four and one-half (4.5) psi within one (1) minutes, the test fails.
  - (7) In the event of failure the Contractor is to take remedial action after which time the test is to be repeated until satisfactory results are attained.

**Basis of Payment**

- (e) Under **Item 20** the Contractor will be paid the contract **lump sum** price for the successful pressure and/or vacuum testing of the entire sewer system and all of its components, which lump sum price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items, as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 14****Item 21 – FURNISH & INSTALL A MANHOLE COVER & FRAME****Item 22 – FURNISH & INSTALL A SINGLE CATCHBASIN GRATE & FRAME****Item 23 – FURNISH & INSTALL A DOUBLE CATCHBASIN GRATE & FRAME****Description**

(a) Under **Item 21, 22 and Item 23** the Contractor shall furnish and set covers and frames for manholes, grates and frames for single grate type standard catchbasins, and grates and frames for double catchbasins, as directed by the Engineer and as specified herein.

(b) All existing round catchbasin grates and frames, "D" types and all other casting/frame types that do not conform to the City of Newton Specifications as noted below, shall be removed and replaced with such grates and frames that conform to these specifications.

(c) Existing grates and frames and/or existing covers and frames which meet City of Newton standards are to be reset, and no new sets are to be installed until all such existing site materials have been exhausted. Under this item any surplus sets, or component thereof, shall at the direction of the Engineer, be otherwise cleaned, off-loaded, and stockpiled at a City of Newton location.

**Materials**

(d) Manhole covers and frames shall comply with the directives and dimensions as shown in the City of Newton General Construction Details and shall be castings of first quality gray iron having an ultimate tensile strength of not less than twenty thousand (20,000) pounds per square inch, to which may be added steel to the amount of twenty (20) per cent and shall be castings of such character and weight as to make sound, strong, tough, durable castings of even grain, free from cracks, scales, lumps, blisters, air or sand holes, or other flaws or defects such as welding, burning in, plugging or excessive shrinkage. All manhole covers and frames shall be machined to insure a good fit and to prevent rocking. Specimen bars shall be furnished for testing purposes if required. The design and construction of all street manhole covers and frames shall be such as to safely insure their ability to support the road traffic, the minimum load being considered as one rear wheel of a 20-ton truck or steam roller transmitting a dead load of seven (7) tons, plus thirty (30) per cent for impact, uniformly distributed on any cover or grating. All covers shall be solid covers of flat design, each provided with four (4) one-half (1/2) inch holes for ventilation, with the appropriate word "DRAIN" or "SEWER" OR "WATER" cast in the cover, and shall have a diameter of twenty-four and three-eighths (24 3/8) inches. Covers and frames shall weigh not less than a total of four hundred and eighty (480) pounds. All castings shall be carefully coated over all surfaces with coal-tar pitch varnish composed of the best quality of coal-tar diluted with sufficient oil to make a smooth, tough, durable, tenacious coating which, when the iron is cold, will not have a tendency to become brittle or scale off. In coating the castings the hot dip process shall be used, the casting and the coating material to be heated to a temperature of three hundred (300) degrees F. and the casting immersed in the vat of coating material for five minutes and then drained of all surplus coating material. All castings used shall meet with the above requirements and be subject to the approval of the Engineer.



Method of Construction

(e) Single catchbasin grates and frames shall conform to **paragraph (d) of this section** of the specifications except that the minimum weight of a single catchbasin grate and frame set shall be four hundred and eighty (480) pounds and the minimum weight of a double catchbasin grate & frame set shall be nine hundred (900) pounds. In addition, these units shall also conform to the specifications shown on the City of Newton Construction Details.

(f) Casting for catchbasins and manholes shall be brought to proper grade with a minimum of two courses of hard red brick. Both brick and casting shall be set in full mortar beds true to the lines and grades as directed.

(g) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(h) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(i) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

Basis of Payment

(j) Under **Item 21** the Contractor will be paid the contract unit price for **each** new manhole cover & frame set, complete-in-place, including furnishing and setting, and for manhole covers and frames, complete in place, including furnishing and setting, which unit prices shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items, as shown on the plans, as shown in the City of Newton General Construction Details, as directed by the Engineer and as specified herein.

(k) Under **Item 22 and Item 23** the Contractor will be paid the contract unit price for **each** new single catchbasin frame & grate set, and for **each** new double catchbasin frame & grate set respectively, complete-in-place, including furnishing and setting, which unit prices shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items, as shown on the plans, as shown in the City of Newton General Construction Details, as directed by the Engineer and as specified herein.

**SECTION 14****Item 24 - ADJUST A PRE-EXISTING CATCHBASIN OR UTILITY CASTING (ALL ZONES)  
(EXCLUDING GATE BOXES)****Item 25 - LOWER & RAISE A PRE-EXISTING UTILITY CASTING IN RECLAMATION AREAS  
(EXCLUDING GATE BOXES)**Description

(a) Under **Item 24 or Item 25** any pre-existing utility fixtures such as manholes, catchbasins or any other similarly large utility casting, situated within the limits of the project area(s), shall be **lowered\*** and subsequently, after the final grade of the roadway has been established, adjusted to the final proposed grade. The work shall be done in such a manner that during the removal of the casting **no debris falls into the invert** of the structure, and upon restoration of the casting there is no movement and once set the entire assembly is rendered flush and even with the adjacent finished area.

**\*Under Item 25: Within a reclamation zone ‘Lower & Raise ‘ shall mean: the removal & restoration of a pre-existing utility casting which work shall include the careful removal & subsequent restoration of the top portion of the target structure. (Due to the reclamation process each structure within a reclamation zone shall be taken down to a minimum depth of eighteen inches (18”) below the roadway surface). In addition, under this item, the Contractor shall also be responsible for the interim plating of the structure, and for the responsible cleaning and stockpiling of the casting set before its reuse.**

Materials

(b) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

(c) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(d) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

Method of Construction

- (e) If the adjusted utility fixture settles or if upon completion of the work the fixture is not even and flush with the adjacent area, or the set causes noise, then the Contractor shall cut out such portions of the existing work as may be necessary to reset the fixtures to the required grade or shall otherwise replace the set in its entirety. The resetting of the fixtures and the replacing of the cut out portions shall be done in a manner satisfactory to the Engineer. All the work done under this paragraph shall be done at the Contractor's own expense except where 'loose cover' noise is the cause of the problem then the City shall only pay for the cost of the new casting set under **Item 21, 22 or Item 23**, whichever is applicable.
- (f) Before any existing frame and grate set, or any frame and cover set is reused, the Contractor is to verify that the existing set is acceptable to the Engineer. If in the opinion of the Engineer the casting set should be replaced then the Contractor is to dispose of that inadequate casting at his own expense and is to replace the casting set with a new unit. The new unit will be paid under **Item 21, 22 or Item 23**, whichever is applicable.
- (g) In areas where the existing surface is to be excavated or reclaimed, and prior to the removal of the castings, the location of the existing castings shall be properly recorded by taking ties in a manner, and on a format, acceptable to the Engineer to whom he shall furnish a copy if so requested. The existing castings shall then be removed and carefully stored by the Contractor. The Contractor shall be held responsible for the protection of the castings and shall not place them alongside the roadway in such a way that the pedestrian and/or vehicular access is impaired.
- (h) The masonry shall be removed from the structures to a level below the proposed subgrade or otherwise, **in those cases where a reclamation process is to be performed, the structures will be taken down to a level eighteen inches (18") below the existing roadway surface.** Subsequently the structures shall be covered with three-eighth (3/8) inch steel plates during construction as directed by the Engineer. The castings shall be replaced and set to finished grade only after the binder course of pavement has been laid. All generated debris shall be immediately removed from the site.
- (i) During the course of construction the catchbasin structures shall be covered with perforated steel plates which shall be backfilled with an approved crushed stone to allow for continued drainage. All other aspects of the final adjustment procedure shall be as described in **paragraph (e), (f) & (g)** of this section.
- (j) **The work shall be done in such a manner that during the course of removal no debris falls into the invert of the structure, and upon restoration there will be no movement of the casting after it has been set to the proposed finish grade of the target surface. The Contractor shall immediately remove any debris which falls into any City of Newton owned structure, and shall immediately notify any utility company when debris falls into any privately owned structure. The Contractor is ultimately responsible for the cleaning of any structure which is adversely affected by his operations.**
- (k) After the castings are set to finished grade the area of excavated pavement around the casting shall be replaced with **four inches (4") bituminous concrete binder**, fully compacted to the full depth of the pavement and **only with an approved pneumatic tamping bit.** No plate compactors will be allowed during this patching operation, however, the Contractor must exercise extreme care not to disrupt the grade of the newly set casting.
- (l) Any frames, grates or covers damaged or lost during construction shall be replaced by the Contractor at his own expense.

Basis of Payment

(m) Under **Item 24** the Contractor will be paid the contract unit price for **each** pre-existing manhole or catchbasin casting, of any type (exclusive of Gate & Service Boxes), that is removed, and subsequently adjusted to the proposed grade. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under these items in accordance with the plans, as directed by the Engineer and as specified herein.

(n) Under **Item 25** the Contractor will be paid the contract unit price for **each** \* pre-existing manhole or catchbasin casting, of any type (exclusive of Gate & Service Boxes), that is removed, **lowered eighteen (18") inches** and subsequently adjusted to the proposed grade **within a reclamation area**. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under these items in accordance with the plans, as directed by the Engineer and as specified herein

(o) Four inch (4") Bituminous concrete binder used for patching around the casting shall be paid for under **Item 39**.

(p) New castings shall be paid for under **Item 21, 22 or Item 23**, whichever is applicable.

**SECTION 14****Item 26 - ADJUST A PRE-EXISTING GATE BOX (NOT TO BE CONFUSED WITH SERVICE BOXES)****Item 27 - LOWER & RAISE A PRE-EXISTING GATE BOX IN RECLAMATION AREAS  
(NOT TO BE CONFUSED WITH SERVICE BOXES)**Description

(a) Under **Item 26 or Item 27** all pre-existing gate boxes such as water gate units (**not to be confused with water service boxes**) and gas gate units (**not to be confused with house service boxes**), or any other similarly smaller type of existing utility structure within the limits of the area to be constructed shall be lowered\* and subsequently, after the final grade of the roadway has been established, adjusted to the final proposed grade. The work shall be done in such a manner that during the course of removal no debris falls into the sleeve of the structure, and upon restoration there will be no movement after they have been set flush and even with the adjacent finished area.

**\*Under Item 27: Within a reclamation zone 'Lower & Raise ' shall mean: the removal & restoration of a pre-existing gate box casting which work shall include the careful removal & subsequent restoration of the top portion of the target structure. (Due to the reclamation process each structure within a reclamation zone shall be taken down to a minimum depth of eighteen inches (18") below the roadway surface). In addition, under this item, the Contractor shall also be responsible for the interim plating of the structure, and for the responsible cleaning and stockpiling of the casting set before its reuse.**

(b) If at any time the adjusted utility fixtures settle, or if upon completion of the work the fixtures are not even and flush with the adjacent area, or the gate box unit causes noise and/or is otherwise unstable, then the Contractor shall cut out such portions of the existing work as may be necessary to reset the fixtures to the required grade or shall otherwise replace the set in its entirety. The resetting of the fixtures and the replacing of the cut out portions shall be done in a manner satisfactory to the Engineer. All the work done under this paragraph shall be done at the Contractor's own expense except where 'loose cover' noise is the cause of the problem then the City shall only pay for the cost of the new casting set under **Item 58 @ Miscellaneous Work Allowance**.

Materials

(c) All brick used in the construction of manholes, or in the construction of the invert, or under the frame and cover, or in the repair and/or restoration of existing sewer manholes, shall be the best quality clay sewer brick, of the class known as "Hard Sewer Brick", burned hard entirely through; shall be straight-edged, of compact texture, and regular and uniform in size and shape. Bricks shall be free from stones and pebbles, and free from cracks, checks or fractures extending into the body of the brick in such a manner as to effect their serviceability or strength. Bricks shall have a compressive strength of not less than four thousand (4000) pounds per square inch when tested (on edge) in accordance with the A.S.T.M. Specifications, Serial Designation: C32-24. They may be rejected if they absorb water to the extent of more than twelve (12) per cent of their dry weight after being dried and then immersed in water, in accordance with A.S.T.M. Specifications, Serial Designation: C32-24. Bricks shall be not less than two and one-quarter (2 1/4) by three and three quarters (3 3/4) by eight (8) inches nor more than two and one-half (2 1/2) by four (4) by eight and one-half (8 1/2) inches in size and shall be of rectangular cross-section. They shall have a smooth plane surface on two ends and at least one edge. When struck together, or when struck with a trowel, they shall give a clear ringing sound. Bricks may be rejected upon visual inspection by the Engineer if, in his opinion, they do not comply with these specifications as to size, shape and freedom from visible defects.

Materials (Continued)

(d) Cement concrete block shall conform to Section M4.05.1 of the Commonwealth of Massachusetts Standard Specifications for Highways and bridges, dated 1988; except that all blocks shall be eight (8) inches in width.

(e) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

Method of Construction

(f) **Section 14, Item 24 and 25, paragraph (e)-(l)** of these specifications shall apply.

Basis of Payment

(f) Under **Item 26** the Contractor will be paid the contract unit price for **each** pre-existing water main or utility gate box, of any type (exclusive of Service Boxes), that is removed and subsequently adjusted to the proposed grade. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under these items in accordance with the plans, as directed by the Engineer and as specified herein.

(g) Under **Item 27** the Contractor will be paid the contract unit price for **each** pre-existing water main or utility gate box, of any type (exclusive of Service Boxes), that is removed, **lowered eighteen (18") inches** and subsequently adjusted to the proposed grade **within a reclamation area**. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under these items in accordance with the plans, as directed by the Engineer and as specified herein.

(i) Four inch (4") Bituminous concrete binder used for patching around the casting shall be paid for under **Item 39**.

(j) New gate box units, only when called for by the Engineer, shall be paid for under **Item 58 @ Miscellaneous Work Allowance**.

**SECTION 15****Item 28 – TYPE SC GRANITE EDGESTONE CURB (FOR BUTTRESSING HANDICAP RAMPS)****Description**

(a) The Contractor is to place Type SC granite edgestone behind only those handicap ramps where a substantial change in grade warrants this treatment. No edgestone is to be installed unless specifically ordered by the Engineer. The Contractor is to work closely with the Engineer to develop an installation strategy for each location where granite edgestone may be required, especially in those cases involving handicap ramp/curb cut installations.

(b) The Contractor is advised that the Engineer may order the installation of edgestone either before the handicap ramp has been installed, or after it has been installed, as this is a subjective process.

**Method of Construction**

(c) Edgestone is to be set vertically, and is to be cleanly broken and neatly fitted end to end, and the joints subsequently mortared to present a pleasing appearance.

(d) Where edgestone is placed along radial lines it is to be broken into reasonably squared pieces, and of a length which presents a pleasing radial appearance once set, but without jeopardizing its structural stability and/or capabilities. The Contractor is obliged to consult with the Engineer prior to the installation of the edgestone.

(e) Edgestone shall be placed on a firmly tamped gravel base, and whenever the edgestone is set behind an existing sidewalk the face of the edgestone shall be brought to the back edge of the walk and the residual void shall be cleanly mortared to present a finished appearance.

(f) Edgestone is to be no less than four (4) feet in length when set in a straight line.

**Method of Measurement**

(g) Measurements taken for payment shall be taken by the **linear foot** for both straight and radially set edgestone complete-in-place.

**Basis of Payment**

(h) Under **Item 28** the Contractor will be paid the contract unit price **per linear foot** of edgestone curb, complete-in-place, which unit price shall include full compensation for all labor materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein



**SECTION 16****Item 29 – RESET EXISTING CURB (WITH CDF EMBEDMENT)  
(INCLUDES CURB WORK REQ'D FOR HANDICAP RAMPS)****Description**

(a) Any existing curb that does not meet the proposed line or grade, or other curb necessarily disturbed throughout the course of these operations, or existing curb used to construct handicap ramp systems, and/or any other existing modular curb designated by the Engineer, shall be reset to the existing line and grade and shall be subsequently embedded in Controlled Density Fill.

(b) Under this item the Contractor shall be responsible for moving existing curb to a new location on the site in order to best meet either the aesthetic and/or the closure needs of the project. This work shall be carried out at the direction of the Engineer.

**Method of Construction**

(c) The curb to be reset shall be excavated down to the underside of the existing curb or lower if necessary. The existing curb shall then be set to true line and grade. Gravel 'bridging' shall be used to support the curb to achieve the initial 'line & grade' with Controlled Density Fill (CDF) being placed in and about the curb soon thereafter to form an unyielding base. However, no CDF shall be used in any curb trench which contains puddled water.

(cc) Controlled Density Fill (CDF) shall be Type 1E (excavatable).

(d) If the Engineer so directs, the Contractor shall remove the existing curb from its existing location, prepare an adequate gravel base and reset the curb as described in **paragraph (b)** above.

(e) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers. Compaction shall be carried on until the density of the material is not less than ninety-five (95) percent of the Standard Proctor Density, as determined by Standard laboratory Compaction Test.

(f) Transition and flush granite curb, either of the straight or curved type, which is installed to meet handicap ramp/curb cut compliances, shall be constructed according to the Architectural Barriers Board Specifications for such ramps as shown in the City of Newton General Construction Details. This work is to be performed to exact tolerances.

**Method of Measurement**

(g) Measurements taken for payment shall be taken by the **linear foot** of the reset curb, **inclusive of CDF embedment** material for both straight and curved curb, handicap ramps, guttermouths, and/or corner blocks, complete-in-place.

**Basis of Payment**

(h) **CDF embedment material shall be paid as part of this item.**

(i) Under **Item 29** the Contractor will be paid the contract unit price per **linear foot** of reset curb, complete-in-place, which unit price **shall include CDF embedment material, the excavation and disposal of all excess material**, and shall further include full compensation for all labor, materials, tools and equipment, and all incidentals necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein.



**SECTION 16****Item 30 - F & I STRAIGHT GRANITE VA-4 CURB  
(WITH CDF EMBEDMENT)  
(INCLUDES 'ISOLATED' INSTALLATIONS & HANDICAP RAMP WORK)****Item 31 - F & I CURVED GRANITE VA-4 CURB  
(WITH CDF EMBEDMENT)  
(INCLUDES HANDICAP RAMP WORK)****Description**

(a) Straight Type VA4 granite curb and curved Type VA4 granite curb shall be furnished, installed, embedded in Controlled Density Fill, and mortared in place in the locations shown on the plans, as directed by the Engineer and as specified herein. This work shall also include curb which is set along the sideline of the street.

(b) All earth and existing materials excavation, inclusive of all existing undesirable curb or fill, and all backfill material necessary to set the curb as specified, shall be done under these items.

**Materials**

(c) The curbstone shall be sawn top, split face.

(d) Materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988, Section M9.04.1 and as shown in the City of Newton General Construction Details.

(dd) Controlled Density Fill (CDF) shall be Type 1E (excavatable).

**Method of Construction**

(e) Construction methods shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988, Section 501.

(f) New transition and flush granite curb, either of the straight or curved type, which is installed to meet handicap ramp/curb cut compliance shall be constructed according to the Architectural Barriers Board Specifications for such ramps as shown in the City of Newton General Construction Details. This work is to be performed to exact tolerances.

(g) The curb trench shall be excavated down to the underside of the existing curb or lower if necessary. The existing curb shall then be set to true line and grade. Gravel 'bridging' shall be used to support the curb to achieve the initial 'line & grade' with Controlled Density Fill (CDF) being placed in and about the curb soon thereafter to form an unyielding base. However, no CDF shall be used in any curb trench which contains puddled water.

(h) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers. Compaction shall be carried on until the density of the material is not less than ninety-five (95) percent of the Standard Proctor Density, as determined by Standard laboratory Compaction Test.

Method of Measurement

(i) Measurements taken for payment will be by the **linear foot** of CDF embedded curb actually installed in accordance with the plans and as directed by the Engineer, as measured along the front arris line of the curb. Curved curb shall include all new curb (except corner blocks) set to curves of one hundred (100) feet radius or less.

Basis of Payment

(j) **CDF embedment material shall be paid as part of this item.**

(k) Under **Item 30 or Item 31** the Contractor will be paid the contract unit prices respectively per **linear foot** for furnishing and placing CDF embedded straight granite curb, including transitioned straight and/or flush/lip granite curb for handicap ramp systems, complete-in-place, and for furnishing and placing CDF embedded curved granite curb, including transitioned and/or flush/lip curved granite curb for handicap ramp systems, complete-in-place, **the excavation and disposal of all excess material(s)**, and for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 16****Item 32 - F & I 2-FOOT RADIUS GRANITE CORNER BLOCK****Description**

- (a) The Contractor shall install granite corner blocks at driveways and in other locations as directed by the Engineer.
- (b) Corner blocks shall be two (2) foot radius Type A granite corner blocks.
- (c) All earth excavation or fill and backfill necessary to set the corner blocks as specified shall be done under this item.

**Materials**

- (d) Materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988, Section M9.04.6.
- (e) Granite corner blocks shall have the same meaning as granite curb corners.

**Method of Construction**

- (f) Construction methods shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988 Section 501.
- (g) The block shall be set true to line and grade. Gravel shall be forced under the curb with appropriate tools so as to form an unyielding base.
- (h) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers. Compaction shall be carried on until the density of the material is not less than ninety-five (95) percent of the Standard Proctor Density, as determined by Standard laboratory Compaction Test.

**Method of Measurement**

- (i) **Each** radius corner block, complete in place, will be considered as one unit.

**Basis of Payment**

- (j) Under **Item 32** the Contractor will be paid the contract unit price for furnishing and placing **each** two (2) foot radius granite corner block, complete in place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 16****Item 33 - F & I 6' STRAIGHT GRANITE CURB GUTTER INLET  
(FOR SINGLE CATCHBASIN)****Item 34 - F & I 7' STRAIGHT GRANITE CURB GUTTER INLET  
(FOR DOUBLE CATCHBASIN)****Description**

- (a) Granite curb inlets shall be furnished and placed in locations shown on the plans, as directed by the Engineer and as specified herein. Curb inlets may be designated as 'Guttermouths'.
- (b) All earth excavation or fill and backfill necessary to set the curb inlets as specified shall be done under these items.

**Materials**

- (c) Materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988, Section M9.04.5.
- (d) Details and dimensions shall conform to those as shown in the City of Newton General Construction Details.

**Method of Construction**

- (e) Construction methods shall conform to Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges dated 1988, Section 501.
- (f) The curb trench shall be excavated down to the underside of the existing curb or lower if necessary. The new curb shall then be set true to line and grade. Gravel shall be forced under the curb with appropriate tools so as to form an unyielding base. However, in all cases mortar is to be used to join the full width of the underside of the inlet with the drainage structure, and in such a way that the full flow of the inlet is not impaired.
- (g) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers. Compaction shall be carried on until the density of the material is not less than ninety-five (95) percent of the Standard Proctor Density, as determined by Standard laboratory Compaction Test.

**Method of Measurement**

- (h) **Each** curb inlet, complete-in-place, shall be considered as one unit.

**Basis of Payment**

- (i) Under **Items 33 or Item 34** the Contractor will be paid the contract unit price for furnishing and placing **each** straight granite curb inlet of the designated type, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 17****Item 35 – REMOVE & STOCKPILE EXISTING GRANITE CURB****Description**

(a) Existing curb that does not meet the proposed design criteria and/or does not meet the aesthetic standards of the project, but which, in the opinion of the Engineer, is suitable for salvage, shall be carefully removed and subsequently stockpiled by the Contractor at a location within the City of Newton.

**Method of Construction**

(b) The curb is to be carefully removed and transported to the designated stockpile area where the Contractor is to off-load it and place it on blocks of wood, and in such an orderly and organized manner that the stockpiled curb will remain stable and shall not topple, but can be easily accessed and subsequently lifted. This operation shall take place in the presence of a designated City of Newton official and all arrangements for such stockpiling activities are to be coordinated by the Contractor.

**Method of Measurement**

(f) Existing curb removed, transported, and stockpiled shall be paid by the linear foot. No carelessly handled pieces shall be considered for payment, but shall be backcharged to the Contractor at the bid price of the respective new curb type. The Engineers decision as to what constitutes mishandling and/or unacceptable stockpiled pieces shall be final.

(e) Two (2) foot radius corner blocks shall be paid at the fixed rate of three (3) linear feet each.

**Basis of Payment**

(f) Under **Item 35** the Contractor will be paid the contract unit price per **linear foot** of desired and acceptable curbing properly transported and subsequently stockpiled in a neat and stable manner at a City of Newton DPW site designated by the Engineer, which unit price shall include full compensation for all labor materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 18****Item 36 - RECLAMATION OF EXISTING BITUMINOUS CONCRETE ROADWAYS  
& THE SUBSEQUENT FINE GRADING & ROLLING OF THE  
PROCESSED MATERIAL****Description**

- (a) The work under this item is for the "in-place" rehabilitation (a.k.a. 'reclamation') of existing bituminous concrete pavement structures. The reclamation work is to be accomplished with an approved self-propelled self-contained mobile unit that is capable of reclaiming the existing pavement structure, in one pass, to a controlled depth of fourteen (14") inches such that the existing pavement structure is simultaneously scarified, pulverized and re-shaped into a processed asphalt stabilized base.
- (b) The work to be done under this item consists of reclaiming existing bituminous concrete, which will typically vary in thickness, along designated roadways, and from within adjacent intersections as the Engineer may direct.
- (c) During the various stages of the reclamation process the Contractor shall apply water to the roadway surface for the purpose of controlling dust as well as for aiding in the compaction requirements of these specifications.
- (d) Subsequent to the reclamation process the roadway(s) shall be fine graded and rolled under this item. The removal of the excess material shall be paid under **Item 37**.

**Method of Construction**

- (e) The Contractor shall be responsible for contacting DIG SAFE prior to beginning his work. In addition the Contractor shall 'sweep' the entire surface area of the roadway with an electronic metal detector device for the purpose of checking for, and ultimately exposing, buried castings.
- (f) The Contractor shall demonstrate to the satisfaction of the Engineer that the equipment, crew and construction methods he intends to use are capable of completing the work in accordance with these specifications and within the time allotted.
- (g) The Contractor is advised that under certain conditions ( i.e bus traffic, emergency vehicle access, arterial roadways, etc.) vehicular traffic flow must be maintained, therefore the Contractor must be prepared to accommodate vehicular travel throughout the project zone for the entire duration of the project while these process' are underway as it shall not be impaired.
- (h) No reclamation activities shall be performed on arterial roadways before 8:30 A.M. nor after 4:00 P.M.. Arterial roadways shall be designated by the Engineer. The Contractor is further advised that the hours of operations are set by law. No machines or equipment are to be activated before 7:00 A.M. & no work is to extend beyond 4:30 P.M.. In addition no weekend or holiday work will be allowed unless special permission is granted.
- (i) Once the reclamation process has begun the Contractor is obliged to carry this effort forward without interruption, yet in accordance with all work hour restrictions unless otherwise directed by the Engineer.
- (j) Under this item the Contractor will be responsible for working closely and cooperatively with the City of Newton officials and it's agents as certain elements of these operations shall require a coordinated effort both in scheduling the work and carrying it forward to completion.

Method of Construction (Continued)

(k) In accordance with **Item 1 @ Mobilization**, and upon receiving reasonable notice from the Contractor, the City of Newton shall refresh the original traverse control points as shown on the plan. The Contractor will then be responsible for extracting and posting the proposed roadway grades for the control of the fine grading operations. These grade points shall be directly onto number six (#6) class iron pins, or four (4) foot long by one (1) inch by one (1) inch oak stakes, that he shall supply and set along and/or reasonably near the proposed gutterline in no less than twenty-five (25) foot intervals and/or in the critical locations shown on the plans or as called for by the Engineer in the field. To that end the Contractor shall also establish clearly marked grade indicators on said pins and/or shall install nylon string lines from pin to pin if so requested by the Engineer to do so, in order to better define the proposed grade. In addition, all pins set along the roadway shall be clearly flagged with brightly colored vinyl flagging material near to their tops so that the pins can be clearly seen by the pedestrian and motoring public.

(l) The Contractor shall be responsible for locating, lowering, and plating all municipal roadway castings and gates (exclusive of catchbasins which will remain exposed and shall be temporarily plated by the Contractor. Also, the Contractor shall be responsible for ensuring that a safety device is left on all protruding catchbasins at days end). The Contractor shall also be responsible for achieving compliance with all utility companies for the same purpose of lowering their respective castings, and/or structures, as applicable. This work shall be performed and paid for under **Item 24, 25, 26 or Item 27**, whichever is applicable

(m) **The Contractor shall be solely responsible for cleaning any residual material, of any type, which due to his operations has fallen into any structure during the course of these reclamation activities. In addition he shall immediately notify 1) the City Agent 2) and the appropriate utility company which owns the rights to the structure. Subsequently the Contractor's responsibility is to ensure the immediate cleaning of the impacted structure by diligently removing all debris until the structure and/or associated pipes and/or appurtenances to ensure that they are are completely clean.** To that end the Contractor will be required to adjust his schedule so that these actions can take place unimpeded by his operations, and that such adjustments to his schedule shall be made at no expense to the City.

(n) No roadway reclamation is to be undertaken until the Contractor has established construction signs and/or safety devices around and about the project zone periphery. To that end the Contractor shall not commence operations until he has appropriately established the semi-permanent signs (i.e. 'Road Under Construction') and/or daily signing (i.e. 'Detour') requirements.

(o) However, the Contractor shall be responsible for establishing supplemental signage, and/or safety devices, as he deems necessary in order to further provide for the safety of the pedestrian and the motoring public, as well as for affording him the opportunity of moving his reclamation process forward without interruption. Under this clause the Contractor shall work closely with the City of Newton Agent in order to coordinate the signing activities in a timely and reasonable manner. Further, due to the nature of this work, the Contractor shall be required, from time to time, to erect, move, relocate, repair, and/or to remove at days end, any site sign in order to either expedite his work or to otherwise accommodate the safety and/or delineate the project zone and/or its active or inactive detour status and route line, and this work shall be done either at his discretion and/or at the request of a City of Newton Agent(s) or Officer. Non-compliance with any such request, as herein described, shall be grounds for the City to halt work until such remedial measures have been taken, and any such loss of time by the Contractor shall be at his own expense.

(oo) Prior to the milling/reclamation process, the Contractor is to install an approved manufactured silt sack in all catchbasins, and is to supplementally cover all existing catchbasin grates with approved steel plates, so that no soil and/or processed material enters into the structure, however at no time are the catchbasins to be placed fully out of service. Once the milling has been completed, and the roadway leveled, then the Contractor is to



Method of Construction (Continued)

remove the plates from the catchbasin structures, and is to further feather the area around the catchbasin in order to prevent residual milled material from entering into the structure during rainstorms. Further, safety devices shall be established by the Contractor at every protruding catchbasin and/or casting and the raised and exposed sides of all frames are to be painted by the Contractor with an approved orange paint so that they can be clearly seen by the motoring public.

(p) Under this item the existing asphalt roadway(s) shall be milled in one pass to a controlled depth of fourteen (14") inches to mix equal amounts of gravel from the existing roadway into the foundation.

(q) Under this item the pulverization shall be accomplished by means of a travelling pulvimiller/hammermill that has been manufactured by a recognized company for the express purpose of reclaiming and reclaiming existing bituminous roadway pavements to a controlled depth of fourteen (14") inches in one pass and conveying this material to a stationary hammermill mounted on the machine. This machine shall be self-propelled and be equipped with an adjustable grading blade thus leaving its path generally smooth for traffic. The key element in this process is the fractioning of the existing asphalt pavement by the high speed hammers of the hammermill. Equipment such as road planers/cold milling machinery will not be allowed as they produce larger asphalt particle size that defeats the objective of this process. The above mentioned process shall produce a uniformly blended base material with a minimum asphalt content of 2%, which will conform to the following gradation requirements:

Sieve Designation	Percentage by Weight Passing
3"	100
1 1/2"	70-100
3/4"	55-90
#40	10-30
#200	1-3

After the material has been accepted by the Engineer, it shall be shaped, graded and rolled to a true grade the prescribed number of inches below and parallel to the proposed finish grades of the roadway as directed by the Engineer. No less than six (6) inches of reclaimed material shall be left in place to serve as the new base for the proposed roadway. From time to time the Contractor may be required to remove and dispose of subsurface soils in order to achieve this goal. Further, the Contractor is reminded that vehicular travel shall not be impaired throughout the project zone for the entire duration of the project while these process' are underway.

(r) The final surface of the reclaimed material shall be graded and planed to a depth of four (4) inches below the proposed finished grade of the new bituminous concrete roadway or as otherwise may be directed by the Engineer.

(s) Only an approved self-propelled pneumatic tired grading machine, designed specifically for the grading of soils and fully capable of planing the surface to a smooth gradient, while simultaneously removing any excess material without tearing and/or plowing the subgrade, shall be used to fine grade the roadway. The Engineer shall be sole judge as to the suitability of the grading unit, those employed in its operation, as well as sole judge as to the final gradient and the quality of the related fine graded reclaimed surface. The Contractor shall also cull out any excessively large stones as the fine grading operation commences so that gouging and plowing of the final surface shall not occur.

(t) Immediately upon the completion of the fine grading operation the Contractor shall use self-propelled steel drum power rollers of no less than ten ton static weight to roll the entire surface until such time as all surface blemishes and/or surface imperfections have been eliminated from the newly graded roadway. In addition the entire surface shall be compacted to a standard density of no less than 95% across its entire surface.



Method of Construction (Continued)

(u) During the course of his operations as well as subsequent to the existing roadway having been reclaimed and fine graded the Contractor shall create, and thereafter maintain, smooth transitional ramps, of an adequate nature as directed by the Engineer, at all driveway aprons as well as at all intersecting roadways. The reclaimed material, stabilized if necessary with water and/or by other approved and/or reasonable means, such that rutting shall not occur, shall be used for this purpose. Any residual material(s), and/or loose stone generated during, and/or after the ramping process, is to be immediately cleaned up and removed from the site by the Contractor.

(v) During the course of these operations the Contractor shall apply water from a suitable water tank mounted on a truck chassis, and in sufficient quantities, and via an approved means such that the water is evenly distributed across a broad area of the roadway that is at least equal in width as the truck upon which the water tank is mounted, and that such water application be made on a continuous basis to both control dust and to insure optimum moisture content from the time the milling has taken place through to the completion of the final grading and compaction operation. Water shall be supplied by the City of Newton, however the Contractor will be required to coordinate his activities, and his access rights to hydrants, directly with the City of Newton Water Department by whose policies he shall abide. Additionally, the Contractor will be required to place a five hundred (\$500.00) dollar deposit with the City of Newton Utilities (Water) Division to obtain a city issued back-flow prevention/hydrant adaptor assembly which shall be the only means used by the Contractor to obtain water from the municipal water system during the course of these operations. Upon completion of the project, and upon successful return of the back-flow assembly, and only if it is in good working condition, then the City shall refund the deposit to the Contractor.

(w) The Contractor will be responsible for removing any unreclaimed bituminous concrete material from within the project limits. The intent of this order is only to assure that all areas rendered and/or deemed to be inaccessible to the reclamation unit(s) are cleared of all existing bituminous material prior to the commencement of the fine grading operation.

Method of Measurement

(x) Under **Item 36** the measurement taken for payment shall be by the square yard for the actual area milled, reclaimed, properly processed, fine graded to the proposed grades, ultimately rolled and fully compacted in place.

Basis of Payment

(y) Under **Item 36** the Contractor will be paid the contract unit price per square yard for the in-place rehabilitation of the existing bituminous concrete roadway by reclaiming and processing the existing pavement structure, complete-in-place, which unit price shall include full compensation for the continuous watering operation, redeployment of signs and/or safety devices as necessary, covering and/or bagging of catchbasins, ramping of roadways and driveways, supplying and posting grade pins as may be required, for the fine grading of the roadway, rolling, and for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the engineer and as specified herein.

(z) Removal and disposal of excess reclaimed pavement material and residual subsurface soils shall be paid under **Item 37**.

(aa) Adjustments of castings shall be paid for under **Item 24, 25, 26 or Item 27**, whichever is applicable.

(ab) Dust control by chemical treatment shall be paid for under **Item 56**.

**SECTION 18****Item 37 – REMOVAL & DISPOSAL OF EXCESS RECLAMATION MATERIAL****Description**

(a) The work under this item shall include furnishing all labor, equipment and materials required to remove all excess reclamation material from the existing roadway, as it is generated, and until such time as the final gradient(s) of the roadway and the outlying areas are achieved. To that end the Contractor shall excavate, rough grade and dispose of the excess processed material, and/or any other existing subsurface material, which must be **removed from the roadway in order to make way for no less than six (6) inches of reclaimed base material and four (4) inches of new bituminous concrete roadway or as otherwise directed by the Engineer.**

(b) **The City of Newton will not provide a disposal site or intermediate stockpiling site.** All excess material(s), of any type, that is generated by the reclamation process and/or its associated operations, shall become the property of the Contractor.

**Method of Construction**

(c) As the processed material and/or roadway is graded **(as specified in Section 18, Item 36)** the excess material **shall be immediately removed from the site. However, under no circumstances is the Contractor to permanently remove more reclaimed material than will be needed to complete the balance of the job.** It is therefore incumbent upon the Contractor to assess the entire project, prior to commencing work, to determine the future and overall needs for the reclaimed material. Thus, the Contractor is responsible for strategically scheduling these operations and for transporting any excess reclaimed material within the project site such that the overall requirements of the project can be met. No additional compensation will be made for the on-site transportation of the reclaimed material. In addition, **no on-site, or off-site stockpiling of material will be allowed without the express approval of the Engineer, and such situations shall be resolved on a case-by-case basis.**

(d) A minimum of six (6) inches of reclaimed material is to remain in place, therefore, under this item, the Contractor shall also be responsible for removing any additional subgrade material to make way for the specified six (6) inches of reclaimed material and the four (4) inches of new bituminous concrete roadway, or to the dimensions as otherwise may be directed by the Engineer so that the overall gradient requirements of the job site can be best met.

(e) During the course of these operations **the Contractor shall apply water** from a suitable water tank mounted on a truck chassis, and in sufficient quantities, and via an approved means such that the water is evenly distributed across a broad area of the roadway that is at least equal in width as the truck upon which the water tank is mounted, and that such water application be made on a continuous basis to control dust.

(f) Water shall be supplied by the City of Newton, however the Contractor will be required to coordinate his activities, and his access rights to hydrants, directly with the City of Newton Water Department by whose policies he shall abide. Additionally, the Contractor will be required to place a five hundred (\$500.00) dollar deposit with the City of Newton Utilities (Water) Division to obtain a city issued back-flow prevention/hydrant adaptor assembly which shall be the only means used by the Contractor to obtain water from the municipal water system during the course of these operations. Upon completion of the project, and upon successful return of the back-flow assembly, and only if it is in good working condition, then the City shall refund the deposit to the Contractor.

Method of Measurement

(g) Measurement taken for payment shall be based upon the actual number of **cubic yards** of material removed from the site, and such measurements shall be made on site, by the designated City of Newton Agent , immediately after each truck has been loaded, and such measurements shall be concurrently verified by the Contractor. No payment shall be made for any material(s) which has not been measured by the City of Newton Agent.

(h) Only the cubic yards of excess reclamation material which have been permanently removed from the site by approval of the Engineer shall be measured and paid.

Basis of Payment

(i) Under **Item 37** the Contractor will be paid the contract price for **each cubic yard** of excess site material that is permanently removed from the site and disposed of, inclusive of applying water as specified herein, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

**SECTION 19****Item 38 - 2" BITUMINOUS CONCRETE FOR TEMPORARY TRENCH RESURFACING****Item 39 - 4" TYPE I-1 BITUMINOUS CONCRETE FOR PERMANENT (PATCH)  
TRENCH RESURFACING (PLACED IN TWO COURSES)**Description

(a) When directed by the Engineer, trenches and areas disturbed by the Contractor shall be resurfaced with bituminous concrete Type I-1.

(b) When in the judgement of the Engineer, conditions necessitate the installation of temporary resurfacing of the trench, this work shall be done and paid for under **Item 38**. The Contractor is to install temporary resurfacing at the end of every work week or as often as the Engineer may direct as the conditions may warrant. Once installed the temporary resurfacing shall be maintained by the Contractor until the permanent resurfacing is installed, and any settlements, or other trench failures shall be repaired to the satisfaction of the Engineer at the Contractor's own expense.

(c) The Contractor shall continually review and maintain all trenches in order to provide safe and unobstructed passage, at all times, for both vehicular and pedestrian traffic. In addition, all trenches and areas that are permanently resurfaced by the Contractor shall be guaranteed against settlement, upheaval or failure of any kind for a period of one (1) year after the City accepts the work, and he shall replace such resurfacings at his own expense. The City Engineer shall be sole judge as to what constitutes a failure, and which portion of the resurfacing is to be replaced, and his decision shall be final.

(d) After the utility, pipe laying and/or other site improvement work has been completed and tentatively accepted by the City of Newton, permanent trench resurfacing, under **Item 39**, shall be installed in two courses. However, prior to the installation of the four (4) inch permanent patch the Contractor must be certain that all areas are fully compacted to ninety-five (95) percent density from the bottom of the trench to the top. Further, permanent trench resurfacing operations, once begun, are to be carried out without interruption, and in a systematic and responsible manner.....

To that end the Contractor is to coordinate his activities such that the trench area, at the end of the workday, has been excavated, appropriately filled and compacted with designated base materials, bindered and topped, all in one day, in order to provide a seamless operation and to eliminate any surface unevenness between the existing roadway pavement surface and the new trench patch.

Further, all permanent trench patch resurfacing must be installed throughout each independent site and/or project zone before the Contractor will be allowed to begin new construction activities elsewhere.

In addition the Contractor shall closely coordinate his preparation activities and the overlay installation such that the trench- cap overlay is installed directly behind the preparation operation.

Materials

(e) Bituminous concrete shall be Type I-1, mixed and transported as specified in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highways and Bridges, dated 1988, Sections 460 and M3.

Method of Construction

- (f) When temporary resurfacing is required, no dense graded crushed stone will be placed in the trench. The trench shall be brought to a grade one and one-half (1-1/2) inches to two (2) inches below the existing pavement with gravel thoroughly compacted and subsequently topped with a one and one-half (1-1/2) inch to two (2) inch depth of bituminous concrete. The depth of temporary patch shall be as directed by the Engineer, but in no case shall exceed two (2) inches in depth.
- (g) The temporary bituminous concrete shall be laid, compacted and finished in accordance with the Engineer's directions, and as often as he shall direct regardless of the quantity.
- (h) When replacing the temporary resurfacing with permanent resurfacing, the existing edge of the previously sawcut pavement shall not be damaged and sufficient gravel shall be excavated to such depths as to accommodate the prescribed depths of bituminous concrete, gravel and dense graded crushed stone courses..
- (i) Under **Item 39** Type I-1 bituminous concrete for permanent trench resurfacing shall be laid on a gravel and dense graded crushed stone base built under **Item 11 or Item 12**, whichever is applicable. The depth of the four (4") depth permanent bituminous concrete pavement shall be laid in two courses. The first course shall be two and one half (2 1/2) inches of Type I-1 binder, compacted with a vibratory plate compactor having a manufacturers rating plate attached at the factory to confirm the unit is capable of generating a centrifugal force of no less than six thousand (6000) pounds and such binder material is to be placed upon eight (8) inches of gravel topped with a maximum four (4) inches of dense graded crushed stone, however the depths of the base materials shall only be installed as pre-approved by the Engineer. The second course shall be one and half (1 1/2) inches of Type I-1 top applied in the conventional manner.
- (j) The bituminous concrete, for full width permanent roadway pavement(s), or the final top applied to the permanent patch trench sections that have been previously bindered, shall be spread with a mechanical spreader of the self powered type having a floating screed assembly controlling the elevation of the strike-off. The screed or strike-off member shall be adjustable to the shape of the cross-section of the finished pavement and shall be of such design as to produce without tearing, shoving or gouging, a finished surface of the evenness and texture desired. The use of road graders, or towed spreaders, shall not be allowed. If, in the opinion of the Engineer, the spreading and finishing equipment is not providing satisfactory results, he shall order the use of such equipment be discontinued and other satisfactory spreading and finishing equipment shall be provided by the Contractor. Hand spreading may be used in places inaccessible to the machine and when permitted by the Engineer. When hand spreading is permitted, the mixture shall be dumped, upon arrival, on approved steel dump sheets outside the area in which it is to be spread and shall then immediately laid to the required depth.
- (k) The Engineer may at any time order the use of side forms which shall be of a type subject to his approval. The forms shall be set so that the finished pavement shall be at a true line and grade as determined by the Engineer. The Engineer may in lieu of forms order the use of iron pins with grade marked thereon, so placed that they will not interfere with the travel of the machine spreader, but close enough so that a short straight edge placed on the newly laid pavement can reach a string line tied from pin to pin, and afford a visual check on the thickness of the newly laid pavement. The Engineer may order the pins to be used on the base, binder, or top courses. All expenses involved in the use of pins including the furnishing of such iron pins shall be borne by the Contractor.

Method of Construction (Continued)

- (l) The bituminous concrete must be kept clean during hauling and handling and covered during transit with canvas or other material which will retain the desired pavement temperature. These mixtures must not be hauled in such a manner that segregation of the ingredients takes place, or that a crust is formed on the surface, or that the mixture will crumble or flatten out when dumped. Trucks which transport the mixture shall be tight, and the side of the bodies shall be coated with a thin film of soap solution. The dispatching of trucks from the distribution point shall be so arranged that all the material which is to be delivered at or on the road surface during any day may be placed and shall have received final compression in a continuous manner in order to minimize cold seaming.
- (m) The bituminous concrete mixture shall be delivered to the work in such condition that it is easily workable and can be efficiently laid. The mixture shall be laid only on an approved base course which is dry and only when weather conditions are suitable which shall be decided by the Engineer.
- (n) Under **Item 39** the permanent bituminous concrete shall only be applied in bright sunlight or partly cloudy weather without the threat of rain. The Contractor is not to schedule and/or apply any bituminous concrete, whose end use is for permanent installation(s), unless such favorable weather conditions are professionally forecast by a recognized weather agency, and at the request of the Engineer, this forecast shall be filed with Engineer in hard-copy form. Further, no bituminous concrete shall be applied upon a residually wet surface, and no bituminous concrete which has been prematurely cooled by rain, either on the roadway or on the truck, will be accepted.
- (o) The temperature of the mixture to be laid shall be between two hundred and twenty-five (225) degrees Fahrenheit and three hundred and twenty-five (325) degrees Fahrenheit and no mixture shall be placed when the air temperature in the shade and away from artificial heat is forty (40) degrees Fahrenheit or less. Variation from these temperatures may be permitted only on written permission of the Engineer.
- (p) The edge of the asphalt mixture adjacent to rigid curb lines, around manholes, or other solid fixtures or where no shoulder is constructed, shall be hand tamped before being rolled.
- (q) The bituminous concrete shall be laid in the prescribed number of courses as shown on the plans or as determined by the Engineer. All depths of courses shall mean the finished depths after rolling. All courses must be laid so that they will have the required thickness and be parallel to the proposed finished grade of the surface.
- (r) After the paving mixture has been properly spread it shall be thoroughly and uniformly compressed by rolling with power rollers. On projects involving less than one hundred and fifty (150) tons of paving mixture per day one (1) tandem roller of not less than ten (10) tons shall be used. On projects using more than one hundred and fifty (150) tons but less than three hundred and fifty (350) tons two (2) rollers shall be required with one (1) additional roller for each two hundred (200) tons of mixture per day thereafter. A day shall be construed as eight (8) hours working time. If, in the opinion of the Engineer, satisfactory compaction is not obtained by rolling with a tandem roller, the Engineer may order the rolling to be done with ten (10) to twelve (12) ton three (3) wheeled roller with wheels not less than twenty-four (24) inches wide. All rollers used shall weigh at least two hundred and fifty (250) pounds per inch width of tread. Each roller shall be in charge of a competent, experienced roller operator and shall be kept in a nearly continuous operation as practical while the work is under way. Rolling shall be continued and so executed that all roller marks, ridges, porous spots and impressions are eliminated, and the resulting surface has the required grade and contour. Rolling shall proceed at a rate not to exceed two hundred and fifty (250) square yards per hour, per roller. To prevent adhesion of the mixture to the roller the wheels shall be kept properly moistened but excess water or oil will not be permitted. Along forms, curb headers and similar structures and all places not accessible with a roller, the mixture shall be thoroughly compacted by tampers. Such tampers shall weigh not less than twenty-five (25) pounds and shall have a tamping face of not more than fifty (50) square inches.



Method of Construction (Continued)

The surface of the mixture after compressing shall be smooth and true to the established crown and grade. Any mixture which becomes loose and broken, mixed with dirt or in any way defective shall be removed and replaced with fresh mixture, which shall be immediately compacted to conform with the surrounding area. Areas of one (1) square foot or more showing an excess of bitumen shall be removed and replaced.

- (s) The densities of the completed pavement shall be not less than ninety-two (92) percent of the calculated density of a voidless mixture composed of the same materials in like proportions. After final compression, samples will be taken from the completed pavements and when tested by standard laboratory methods shall show compliance with aforesaid density requirement.
- (t) Placing of the mixture shall be as nearly continuous as possible and the roller shall pass over the unprotected end of the freshly laid mixture only when the laying of the course is to be discontinued for such length of time as would permit the mixture to attain initial stability. In all such cases, including the formation of joints as hereinafter specified, provisions shall be made for proper bond with the new surface for the full specified depth of the courses. Transverse joints shall be formed by cutting back on the previous days run so as to expose the full depth of the course. When the laying of the course is resumed, the exposed edge of the joint shall be painted with a thin coat of hot asphalt cement and the fresh mixture shall be raked against the joint. Hot smoothers or tampers shall be carefully employed in such a manner as to heat the old pavement sufficiently, without burning it, to insure proper bond and then rolled. The work of setting up or making these joints shall be performed by competent workmen who are capable of making a correct, clean and neat joint.
- (u) The lengths of lanes or strips of bituminous concrete in the base, binder and top courses shall be under control of the Engineer at all times. The Contractor shall lay such lengths as approved by the Engineer and then lay all adjacent strips to the full width of the roadway before being allowed to proceed ahead with other lanes. The practice of laying lanes of bituminous concrete for such lengths that an unduly long period of time elapses before laying adjacent lanes shall not be allowed.
- (v) The finished surface shall present an even texture free from blemishes, ridge marks or imperfect spots and it shall be true as to line and grade. When tested with a sixteen (16) foot straight edge placed parallel with the center line of the surface course there shall be no deviation from a true surface in excess of one-quarter ( $1/4$ ) of an inch. A ten (10) foot straight edge may be used on vertical curves. If any soft or imperfect places or spots develop in the surface, all such places shall be removed and replaced with new material and then rolled until the edges at which the new work connects with the old becomes invisible. All such removal and replacement of unsatisfactory surfacing shall be done by the Contractor without additional compensation.
- (w) The edges of the permanently resurfaced trenches (where the new bituminous concrete meets the existing pavement) shall be sealed with bitumen and lightly backsanded, as directed by the Engineer. Bitumen used for sealing shall be RS-1 emulsion or other approved bitumen.

Method of Measurement

(x) Measurements taken for payment under **Item 38** shall be by the **ton** of bituminous concrete actually used. The Contractor shall furnish the Engineer with receipts from the plant showing the weight of each load of bituminous concrete furnished and placed, however the Engineer reserves the right to adjust payment in the event the volume of material is either not entirely used or the shipment has arrived on the site as already partially used.

(y) Measurements taken for payment under **Item 39** shall be by the **ton** of bituminous concrete actually used complete-in-place, and shall be taken to limits as pre-approved by the Engineer. Areas disturbed by the Contractor beyond these limits shall be paved, but shall not be measured for payment. The sealing operation described in **paragraph (w)** above shall be included in the measurement for payment. The Contractor shall furnish the Engineer with receipts from the plant showing the weight of each load of bituminous concrete furnished and placed, however the Engineer reserves the right to adjust payment in the event the volume of material is either not entirely used or the shipment has arrived on the site as already partially used.

Basis of Payment

(z) Under **Item 38** the Contractor will be paid the contract unit price per ton for bituminous concrete Type I-1 for temporary trench resurfacing, complete-in-place, which unit price shall include full compensation for all excavation of undesirable material, and the disposal thereof, and for all labor, materials, tools and equipment, and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

(aa) Under **Item 39** the Contractor will be paid the contract unit price per ton for bituminous concrete Type I-1 used for permanent 'patch' trench resurfacing, complete-in-place, which unit price shall include full compensation for all excavation of undesirable material, and the disposal thereof, in addition to all labor and materials, and for all tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

(ab) Gravel and/or dense graded crushed stone used to build the base for Permanent trench resurfacing shall be paid for under **Item 11 or Item 12**, whichever is applicable, however the Engineer reserves the right to limit the use of either of these elements in the event the existing material is deemed to be adequate for this end-use.



**SECTION 19****Item 40 - FURNISH & PLACE 1 ½" TYPE I-1 BITUMINOUS CONCRETE TOP MIX  
(WITH PRIOR TACK COAT APPLICATION)****Description**

(a) Under Item 40 the Contractor shall furnish and place machine applied RS-1 tack coat and shall furnish, place & provide (after rolling) a one and one-half inch (1 ½") application of Type I-1 bituminous concrete top mix to roadways that were previously cold-planed or have otherwise been previously bindered. In certain cases, and only by order of the Engineer, the Contractor may be required to provide a two inch (2") overlay to best meet the field conditions at hand.

(b) During the term of this contract the work under **Item 40** shall be performed according to a schedule that will be determined by the Engineer. The intent of this order is to best meet the schedule of the various preparation process' that are to be performed under separate contract(s) and/or actions. **In the event the City has not sufficiently prepared the targeted street(s) to receive the desired application of bituminous pavement overlay, in accordance with the tentative schedule, then the Contractor shall commence his paving operations as soon as possible thereafter, and at the will of the City Engineer.**

(c) No **daytime** paving operation shall be performed on **arterial** roadways before **8:30 A.M.** nor after **4:00 P.M.** Arterial roadways shall be designated by the Engineer. The Contractor is further advised that the hours of operations are set by law. During '**daytime**' operations **no machines or equipment are to be activated before 7:00 A.M. & nor shall any work extend beyond 4:30 P.M.** In addition no weekend or holiday work will be allowed unless special permission is granted.

(cc) The Contractor is to create and deliver a written notice(s) to each address located along the roadway corridor, which he intends to occupy and pave, to inform all concerned parties that the normal traffic pattern, unique to each area, will be disrupted during the course of his operations. The notices are to be delivered **by the Contractor's Personnel at least twenty-four (24) hours in advance of each separate site occupation and/or disruption** of the respective traffic patterns in and about the area(s), or as otherwise directed by the Engineer. The notice is to be on a format acceptable to the Engineer and shall contain the time, date and duration of the expected disruption. **However in no case shall any operation be posted to occur before the lawful 7:00 A.M., and notwithstanding emergency conditions, nor shall any cold-planing or paving related operation extend beyond 4:30 P.M of the same day.** The notice is to be placed in a conspicuous location and as near to the regular mail delivery as possible such that the notice will be gathered up with that days regular mail. The distribution of notices is to further comply with the directives shown on the plans. In addition the Contractor shall also notify the Engineer, the City of Newton Customer Service Division and the City of Newton Fire Department Headquarters at least twenty four (24) hours in advance of a planned event, with a copy of such notice being made to the Engineer. The Engineer shall have the right to request that such advance notifications be made either in writing or by verbal communiqué. Subsequently, upon the restoration of normal traffic patterns the Contractor shall notify the Engineer, the City of Newton Customer Service Division and the City of Newton Fire Department Headquarters within twenty-four (24) hours after completing the paving operation(s), in order to keep all interested parties apprised of the current conditions.

Materials

(d) The pavement shall be composed of mineral aggregate, mineral filler and bituminous material, plant mixed and laid hot. The mixing and materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highway and Bridges, Sections 460 and M3, dated 1988

(e) **A tack coat of emulsified bituminous material shall be applied to all existing bituminous concrete surfaces prior to the application of the top mix.** The tack coat shall be emulsified asphalt, grade RS-1 conforming to the Commonwealth of Massachusetts Standard Specifications M3.03.0.

Method of Construction

(ee) The Contractor shall comply with the directives of **Paragraph (cc)** pertaining to the distribution of notices.

(f) Prior to the application of the bituminous tack coat and/or the bituminous pavement the Contractor shall ensure that all catchbasins are covered to the fullest extent with temporary steel plates to prevent any material from entering the drainage structure. In the event contamination of the structure does take place then the Contractor shall immediately remove and dispose of all such contaminating material to the satisfaction of the Engineer.

(g) **The tack coat shall be uniformly applied to the roadway by mechanical means at the rate of application of 1/20 gal./sq. yd. such that the entire surface is ultimately covered by the tack coat.** The means and methods used for the application of the bituminous tack coat shall be subject to the approval of the Engineer, and such equipment, as well as the process of application, shall commence in such a manner that no adjacent structures, vehicles and/or other site amenities are splattered or are otherwise contaminated by the tack coat. In the event splatter and/or contamination takes place then the Contractor shall be responsible for immediately cleaning the affected item(s) to the satisfaction of the Engineer.

(h) The application of tack coat shall be carried on incrementally as the paving operation progresses such that all existing bituminous concrete material is prepared to the satisfaction of the Engineer and at a reasonable rate such that the subsequent application of bituminous paving follows closely behind. **It is imperative that these two separate operations are conducted in such a manner, and with such precise timing, to ensure that the tack coat has attained its optimum bonding potential. To that end no bituminous pavement is to be placed over any tack coated surface until such time as the tack coat has ‘flashed’ and the proper ‘color’ has been attained which assures that the excess moisture inherently contained in this type of emulsion tack coat has dissipated.**

(i) The bituminous concrete mixture shall be delivered to the work in such condition that it is easily workable and can be efficiently laid.

(j) **Bituminous concrete shall only be applied under clear or partly cloudy skies without the threat of rain. The Contractor is not to schedule bituminous roadway application unless such favorable weather conditions are professionally forecast by a recognized weather agency, and at the request of the Engineer, this forecast shall be filed with Engineer in hard-copy form. Further, no bituminous concrete shall be applied upon a residually wet bituminous surface or otherwise upon a saturated soil surface, and in no case shall any bituminous concrete be accepted if it has been prematurely cooled by rain either while on the truck or after it has been applied to the roadway.**

Method of Construction (Continued)

(k) Prior to the installation of bituminous concrete the Contractor shall clearly mark the edge line and end limit lines of each paving lane to ensure that the final seams are straight, crisp, flat and are rolled hot (aisle to aisle) to produce a complete non-porous and fully bonded seam. Edge and limit lines shall be marked in a clear manner using white fluorescent paint and this work shall be performed to the satisfaction of the Engineer.

(l) Prior to the commencement of paving operations the Contractor shall ensure that excessive residual and/or loose material(s) which escaped the initial sweeping of the street is removed from around castings and from area(s) that were inaccessible to the power brooming. The Contractor shall be responsible for the collection and disposal of this residual material.

(m) The bituminous concrete shall only be applied on an existing bituminous concrete surface that has been swept clean by the Contractor and is free of dirt, water or other foreign material, and shall be completely dry before the tack coat is placed.

(n) Prior to the installation of bituminous concrete under the Contractor shall apply a thin coat of kerosene or other acceptable liquid barrier that prevents the bituminous concrete from bonding to the casting. In addition the Contractor shall clearly mark the locations of all castings, by means of an offset, so that they may be easily found and immediately cleaned of all residual bituminous material once the paving machine has passed by, subsequently ensuring that the edge line of every casting is detailed and 'feathered' by hand so that there is no noticeable grade difference between the road surface and the surface of the casting edge for a distance of eight feet (in all directions) from the edge of the casting. **Note: The painting of castings, or the painting of any adjacent area(s), which will not be covered by the newly laid pavement, shall not be allowed.**

(o) The bituminous concrete shall be spread with a mechanical spreader of the self powered type having a floating screed assembly controlling the elevation of the strike-off. The screed or strike-off member shall be adjustable to the shape of the cross-section of the finished pavement and shall be of such design as to produce without tearing, shoving or gouging, a finished surface of the evenness and texture desired. The use of road graders, or towed spreaders, shall not be allowed. If, in the opinion of the Engineer, the spreading and finishing equipment is not providing satisfactory results, he shall order the use of such equipment be discontinued and other satisfactory spreading and finishing equipment shall be provided by the Contractor. Hand spreading may be used in places inaccessible to the machine and when permitted by the Engineer. When hand spreading is permitted, the mixture shall be dumped, upon arrival, on approved steel dump sheets outside the area in which it is to be spread and shall then immediately laid to the required depth.

(p) The Engineer may at any time order the use of side forms which shall be of a type subject to his approval. The forms shall be set so that the finished pavement shall be at a true line and grade as determined by the Engineer. The Engineer may in lieu of forms order the use of iron pins with grade marked thereon, so placed that they will not interfere with the travel of the machine spreader, but close enough so that a short straight edge placed on the newly laid pavement can reach a string line tied from pin to pin, and afford a visual check on the thickness of the newly laid pavement. The Engineer may order the pins to be used on the base, binder, or top courses. All expenses involved in the use of pins including the furnishing of such iron pins shall be borne by the Contractor.

(q) The bituminous concrete must be kept clean during hauling and handling and covered during transit with canvas or other material which will retain the desired pavement temperature. These mixtures must not be hauled in such a manner that segregation of the ingredients takes place, or that a crust is formed on the surface, or that the mixture will crumble or flatten out when dumped. Trucks which transport the mixture shall be tight, and the side of the bodies shall be coated with a thin film of soap solution. The dispatching of trucks from the distribution point shall be so arranged that all the material which is to be delivered at or on the road surface during any day may be placed and shall have received final compression in a continuous manner in order to minimize cold seaming

Method of Construction (Continued)

- (r) The bituminous concrete mixture shall be delivered to the work in such condition that it is easily workable and can be efficiently laid.
- (s) The temperature of the mixture to be laid shall be between two hundred and twenty-five (225) degrees Fahrenheit and three hundred and twenty-five (325) degrees Fahrenheit and no mixture shall be placed when the air temperature in the shade and away from artificial heat is forty (40) degrees Fahrenheit or less. Variation from these temperatures may be permitted only on written permission of the Engineer.
- (t) The edge of the asphalt mixture adjacent to rigid curb lines, around manholes, or other solid fixtures or where no shoulder is constructed, shall be hand tamped before being rolled.
- (u) The bituminous concrete shall be laid in the prescribed number of courses as shown on the plans or as determined by the Engineer. The top/overlay course shall be one and one-half (1 1/2) inches to two (2) inches in depth. All depths of courses described above shall mean the finished depths after rolling. All courses must be laid so that they will have the required thickness and be parallel to the proposed finished grade of the surface.
- (v) After the paving mixture has been properly spread it shall be thoroughly and uniformly compressed by rolling with power rollers. On projects involving less than one hundred and fifty (150) tons of paving mixture per day one (1) tandem roller of not less than ten (10) tons shall be used. On projects using more than one hundred and fifty (150) tons but less than three hundred and fifty (350) tons two (2) rollers shall be required with one (1) additional roller for each two hundred (200) tons of mixture per day thereafter. A day shall be construed as eight (8) hours working time. If, in the opinion of the Engineer, satisfactory compaction is not obtained by rolling with a tandem roller, the Engineer may order the rolling to be done with ten (10) to twelve (12) ton three (3) wheeled roller with wheels not less than twenty-four (24) inches wide. All rollers used shall weigh at least two hundred and fifty (250) pounds per inch width of tread. Each roller shall be in charge of a competent, experienced roller operator and shall be kept in a nearly continuous operation as practical while the work is underway. The pavement shall be rolled longitudinally, diagonally, and transversely, as directed. Longitudinal rolling shall start at the side and proceed toward the center of the pavement, overlapping on successive trips by at least one-half (1/2) the width of the rear wheel of the roller.
- (w) In parking lots, intersections and/or other similar wide areas, and at the direction of the Engineer diagonal rolling shall be in two (2) directions, the second diagonal rolling crossing the lines of the first. If the width of the work permits, it shall in addition be rolled at right angles to the center line.
- (x) Rolling shall be continued and so executed that all roller marks, ridges, porous spots and impressions are eliminated, and the resulting surface has the required grade and contour. Rolling shall proceed at a rate not to exceed two hundred and fifty (250) square yards per hour, per roller. To prevent adhesion of the mixture to the roller the wheels shall be kept properly moistened but excess water or oil will not be permitted. Along forms, curb headers and similar structures and all places not accessible with a roller, the mixture shall be thoroughly compacted by tampers. Such tampers shall weigh not less than twenty-five (25) pounds and shall have a tamping face of not more than fifty (50) square inches. The surface of the mixture after compressing shall be smooth and true to the established crown and grade. Any mixture which becomes loose and broken, mixed with dirt or in any way defective shall be removed and replaced with fresh mixture, which shall be immediately compacted to conform with the surrounding area. Areas of one (1) square foot or more showing an excess of bitumen shall be removed and replaced.

Method of Construction (Continued)

(y) The densities of the completed pavement shall be not less than ninety-two (92) percent of the calculated density of a voidless mixture composed of the same materials in like proportions. After final compression, samples will be taken from the completed pavements and when tested by standard laboratory methods shall show compliance with aforesaid density requirement. Any areas that do not meet this criteria shall be taken up and replaced by the Contractor at no expense to the City of Newton.

(z) Placing of the mixture shall be as nearly continuous as possible and the roller shall pass over the unprotected end of the freshly laid mixture only when the laying of the course is to be discontinued for such length of time as would permit the mixture to attain initial stability. In all such cases, including the formation of joints as hereinafter specified, provisions shall be made for proper bond with the new surface for the full specified depth of the courses. Transverse joints shall be formed by cutting back on the previous days run so as to expose the full depth of the course. When the laying of the course is resumed, the exposed edge of the joint shall be painted with a thin coat of hot asphalt cement and the fresh mixture shall be raked against the joint. Hot smoothers or tampers shall be carefully employed in such a manner as to heat the old pavement sufficiently, without burning it, to insure proper bond and then rolled. The work of setting up or making these joints shall be performed by competent workmen who are capable of making a correct, clean and neat joint.

(aa) The lengths of lanes or strips of bituminous concrete in the base, binder and top courses shall be under control of the Engineer at all times. The Contractor shall lay such lengths as approved by the Engineer and then lay all adjacent strips to the full width of the roadway before being allowed to proceed ahead with other lanes. **The practice of laying lanes of bituminous concrete for such lengths that an unduly long period of time elapses before laying adjacent lanes shall not be allowed in order to ensure that adjacent seams are rolled hot.**

(ab) The finished surfaces shall present an even texture free from blemishes, ridge marks or imperfect spots and it shall be true as to line and grade. When tested with a sixteen (16) foot straight edge placed parallel with the center line of the surface course there shall be no deviation from a true surface in excess of one-quarter (1/4) of an inch. A ten (10) foot straight edge may be used on vertical curves.

(ac) If any soft or imperfect places or spots develop in the surface, all such places shall be removed and replaced with new material and then rolled until the edges at which the new work connects with the old becomes invisible. All such removal and replacement of unsatisfactory surfacing shall be done by the Contractor without additional compensation.

(ad) Under **Item 40** the Contractor shall apply leveling courses to the existing roadway in those locations designated by the Engineer in order to remedy any deficient gradient of the roadway prior to the final application of the final top mix.

(ae) Subsequent to the application of the top mix the Contractor shall apply a heavy coat of tack coat to the seams where the new top mix meets the existing road surface. As the tack coat is applied the Contractor shall backsand the seam using clean fine graded masons sand.

(af) Upon completion of each day or nights work the Contractor shall remove all residual material from the site and shall dispose of it at no expense to the City of Newton.



Method of Construction (Continued)

(ag) **Supplemental traffic control measures shall be provided by the Contractor as each particular location will pose its own unique traffic and operational control problems. The means and methods used by the Contractor to channelize and/or control traffic shall be manufactured of first quality materials that provide an adequate visibility target value and conform to the latest MUCTD safety standards, especially concerning those supplemental traffic control devices that are deployed during nighttime operations. Under this paragraph the Contractor shall deploy, move, redeploy and reposition such devices to the extent that a certain and adequate number of safety devices are moved forward with the work in order to protect both people and property from harm while at the same time channelizing traffic in the most efficient manner possible.**

(ah) In the event 'Manhole Protection Rings' have been deployed prior to the commencement of the paving operations, then under this item the Paving Contractor shall remove the rings, but only as the tack coat unit approaches them, and he shall carefully and responsibly stack them alongside the roadway and in such a responsible manner that they do not impede or in any way interfere with either pedestrian and/or vehicular traffic.

Method of Measurement

(ai) Under **Item 40** the 1 ½"-2" bituminous concrete top mix, and any material used for leveling courses, shall be paid for by the **ton**, but only for that material which is ultimately applied to the roadway and is which is deemed acceptable and complete-in-place. The Contractor shall, immediately upon delivery of any bituminous concrete paving product, furnish the Engineer with a computer generated receipt that has been issued directly by the bituminous asphalt batching plant. This invoice shall clearly show the **tare weight and date of delivery** for each load of bituminous concrete which is ultimately furnished and placed. However **the Engineer reserves the right to adjust the tare weight** in the event the volume of material is; (1) not entirely used (2) the shipment has arrived on the site as already partially used (3) the material has been rejected either by the Contractor or the Engineer, and/or (4) if a field measurement subsequent to the installation of the material reveals inconsistencies in the amount of material allegedly used. The tare/weight slips are to be plant issued and shall bear the name of the vendor and shall **be surrendered to the Engineer immediately upon the delivery of the material. The City will have no obligation to pay for any errant slips which are forwarded after the paving operation has ceased.**

(aj) **The per ton payment shall include the cost of furnishing and applying the tack coat.**

Basis of Payment

(ak) Under **Item 40** the Contractor will be paid the contract unit price per **ton** for **the bituminous concrete Type I-1 1 ½" –2" top mix and/or variable thickness leveling course(s) applied, complete-in-place**, which unit price shall include full compensation for furnishing and applying the **tack coat**, and for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item, as directed by the Engineer, and as specified herein.

(al) **The per ton payment shall include the cost of furnishing and applying the tack coat.**

**SECTION 10****Item 41 – 4" TYPE I-1 BITUMINOUS CONCRETE ROADWAY PAVEMENT  
(PLACED IN TWO COURSES)**Description

(a) The Contractor shall furnish and place bituminous concrete Type I-1 as shown on the plans, as directed by the Engineer and as specified herein.

Materials

(b) This type of pavement shall be composed of mineral aggregate, mineral filler and bituminous material, plant mixed and laid hot. The mixing and materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highway and Bridges, Sections 460 and M3, dated 1988

(c) The bituminous concrete shall be laid on the reclaimed base course built under **Item 36**.

Method of Construction

(d) The bituminous concrete shall be spread with a mechanical spreader of the self powered type having a floating screed assembly controlling the elevation of the strike-off. The screed or strike-off member shall be adjustable to the shape of the cross-section of the finished pavement and shall be of such design as to produce without tearing, shoving or gouging, a finished surface of the evenness and texture desired. The use of road graders, or towed spreaders, shall not be allowed. If, in the opinion of the Engineer, the spreading and finishing equipment is not providing satisfactory results, he shall order the use of such equipment be discontinued and other satisfactory spreading and finishing equipment shall be provided by the Contractor. Hand spreading may be used in places inaccessible to the machine and when permitted by the Engineer. When hand spreading is permitted, the mixture shall be dumped, upon arrival, on approved steel dump sheets outside the area in which it is to be spread and shall then immediately laid to the required depth.

(e) The Engineer may at any time order the use of side forms which shall be of a type subject to his approval. The forms shall be set so that the finished pavement shall be at a true line and grade as determined by the Engineer. The Engineer may in lieu of forms order the use of iron pins with grade marked thereon, so placed that they will not interfere with the travel of the machine spreader, but close enough so that a short straight edge placed on the newly laid pavement can reach a string line tied from pin to pin, and afford a visual check on the thickness of the newly laid pavement. The Engineer may order the pins to be used on the base, binder, or top courses. All expenses involved in the use of pins including the furnishing of such iron pins shall be borne by the Contractor.

(f) The bituminous concrete must be kept clean during hauling and handling and covered during transit with canvas or other material which will retain the desired pavement temperature. These mixtures must not be hauled in such a manner that segregation of the ingredients takes place, or that a crust is formed on the surface, or that the mixture will crumble or flatten out when dumped. Trucks which transport the mixture shall be tight, and the side of the bodies shall be coated with a thin film of soap solution. The dispatching of trucks from the distribution point shall be so arranged that all the material which is to be delivered at or on the road surface during any day may be placed and shall have received final compression in a continuous manner in order to minimize cold seaming.

Method of Construction (Continued)

(g) The bituminous concrete mixture shall be delivered to the work in such condition that it is easily workable and can be efficiently laid. The mixture shall be laid only on an approved base course which is dry and only when weather conditions are suitable which shall be decided by the Engineer.

(h) All bituminous concrete applied to the roadway shall only be applied in bright sunlight or partly cloudy weather without the threat of rain. The Contractor is not to schedule bituminous roadway application unless such favorable weather conditions are professionally forecast by a recognized weather agency, and at the request of the Engineer, this forecast shall be filed with Engineer in hard-copy form. Further, no bituminous concrete shall be applied upon a residually wet surface, and no bituminous concrete which has been prematurely cooled by rain, either on the roadway or on the truck, will be accepted.

(i) The temperature of the mixture to be laid shall be between two hundred and twenty-five (225) degrees Fahrenheit and three hundred and twenty-five (325) degrees Fahrenheit and no mixture shall be placed when the air temperature in the shade and away from artificial heat is forty (40) degrees Fahrenheit or less. Variation from these temperatures may be permitted only on written permission of the Engineer.

(j) The edge of the asphalt mixture adjacent to rigid curb lines, around manholes, or other solid fixtures or where no shoulder is constructed, shall be hand tamped before being rolled.

(k) The bituminous concrete shall be laid in the prescribed number of courses as shown on the plans or as determined by the Engineer. A four (4) inch pavement shall be laid with a base course of two and one-half (2 1/2) inches in depth and a top course of one and one-half (1 1/2) inches in depth. All depths of courses described above shall mean the finished depths after rolling. All courses must be laid so that they will have the required thickness and be parallel to the proposed finished grade of the surface.

(l) After the paving mixture has been properly spread it shall be thoroughly and uniformly compressed by rolling with power rollers. On projects involving less than one hundred and fifty (150) tons of paving mixture per day one (1) tandem roller of not less than ten (10) tons shall be used. On projects using more than one hundred and fifty (150) tons but less than three hundred and fifty (350) tons two (2) rollers shall be required with one (1) additional roller for each two hundred (200) tons of mixture per day thereafter. A day shall be construed as eight (8) hours working time. If, in the opinion of the Engineer, satisfactory compaction is not obtained by rolling with a tandem roller, the Engineer may order the rolling to be done with ten (10) to twelve (12) ton three (3) wheeled roller with wheels not less than twenty-four (24) inches wide. All rollers used shall weigh at least two hundred and fifty (250) pounds per inch width of tread. Each roller shall be in charge of a competent, experienced roller operator and shall be kept in a nearly continuous operation as practical while the work is under way. The pavement shall be rolled longitudinally, diagonally, and transversely, as directed. Longitudinal rolling shall start at the side and proceed toward the center of the pavement, overlapping on successive trips by at least one-half (1/2) the width of the rear wheel of the roller. Diagonal rolling shall be in two (2) directions, the second diagonal rolling crossing the lines of the first. If the width of the work permits, it shall in addition be rolled at right angles to the center line. This method of rolling shall be continued and so executed that all roller marks, ridges, porous spots and impressions are eliminated, and the resulting surface has the required grade and contour. Rolling shall proceed at a rate not to exceed two hundred and fifty (250) square yards per hour, per roller. To prevent adhesion of the mixture to the roller the wheels shall be kept properly moistened but excess water or oil will not be permitted. Along forms, curb headers and similar structures and all places not accessible with a roller, the mixture shall be thoroughly compacted by tampers. Such tampers shall weigh not less than twenty-five (25) pounds and shall have a tamping face of not more than fifty (50) square inches. The surface of the mixture after compressing shall be smooth and true to the established crown and grade. Any mixture which becomes loose and broken, mixed



Method of Construction (Continued)

with dirt or in any way defective shall be removed and replaced with fresh mixture, which shall be immediately compacted to conform with the surrounding area. Areas of one (1) square foot or more showing an excess of bitumen shall be removed and replaced.

(m) The densities of the completed pavement shall be not less than ninety-two (92) percent of the calculated density of a voidless mixture composed of the same materials in like proportions. After final compression, samples will be taken from the completed pavements and when tested by standard laboratory methods shall show compliance with aforesaid density requirement.

(n) Placing of the mixture shall be as nearly continuous as possible and the roller shall pass over the unprotected end of the freshly laid mixture only when the laying of the course is to be discontinued for such length of time as would permit the mixture to attain initial stability. In all such cases, including the formation of joints as hereinafter specified, provisions shall be made for proper bond with the new surface for the full specified depth of the courses. Transverse joints shall be formed by cutting back on the previous days run so as to expose the full depth of the course. When the laying of the course is resumed, the exposed edge of the joint shall be painted with a thin coat of hot asphalt cement and the fresh mixture shall be raked against the joint. Hot smoothers or tampers shall be carefully employed in such a manner as to heat the old pavement sufficiently, without burning it, to insure proper bond and then rolled. The work of setting up or making these joints shall be performed by competent workmen who are capable of making a correct, clean and neat joint.

(o) The lengths of lanes or strips of bituminous concrete in the base, binder and top courses shall be under control of the Engineer at all times. The Contractor shall lay such lengths as approved by the Engineer and then lay all adjacent strips to the full width of the roadway before being allowed to proceed ahead with other lanes. The practice of laying lanes of bituminous concrete for such lengths that an unduly long period of time elapses before laying adjacent lanes shall not be allowed.

(p) The finished surface shall present an even texture free from blemishes, ridge marks or imperfect spots and it shall be true as to line and grade. When tested with a sixteen (16) foot straight edge placed parallel with the center line of the surface course there shall be no deviation from a true surface in excess of one-quarter (1/4) of an inch. A ten (10) foot straight edge may be used on vertical curves. If any soft or imperfect places or spots develop in the surface, all such places shall be removed and replaced with new material and then rolled until the edges at which the new work connects with the old becomes invisible. All such removal and replacement of unsatisfactory surfacing shall be done by the Contractor without additional compensation.

(q) Before commencing with laying the binder course the Contractor shall re-roll the previously graded and rolled reclamation material for the purpose of bedding all loosened stones and/or other granular material, or to otherwise correct any surface condition that would, in the opinion of the Engineer, prevent the mix from being applied to a firm and uniform reclamation material surface. Further, any large stones and/or other deleterious material, shall be removed from the base surface prior to the commencement of laying either the binder or the finish top course. In addition, the Contractor shall carefully and diligently remove any temporary ramping material(s), leaving a clean and uniform surface at each of those locations, prior to commencing with the paving operation(s).

Method Measurement

(r) Measurement taken for **Item 41** shall be by **the ton** for material installed. To that end immediately upon delivery, and subsequent to an inspection of the hauling vehicle by the Engineer, the Contractor shall furnish the Engineer with his own copy of the plant receipt which clearly shows the weight of the bituminous material that is being furnished and installed, however the Engineer reserves the right to adjust the payment in the event the volume of material is either not entirely used, and/or the material has become unacceptable due to premature cooling or the like and/or the shipment has arrived on the site as already partially used.

Basis of Payment

(s) Under **Item 41** the Contractor will be paid the contract unit price for each **ton** of bituminous concrete Type I-1, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 20**

**Item 42 – 4” CEMENT CONCRETE WALKS WITH LAMPBLACK  
( @ 2 POUNDS PER/ CY)**

**Item 43 – 6” CEMENT CONCRETE DRIVEWAY APRONS WITH LAMPBLACK  
( @ 2 POUNDS PER /CY)**

**Item 44 – 8” ‘HIGH-EARLY’ CEMENT CONCRETE RAMP AT RAISED CROSSWALK WITH 8x8 WWF  
AND LAMPBLACK  
( @ 2 POUNDS PER /CY)**

**Description**

(a) All cement concrete walks, driveway aprons, driveways, and/or ramp systems shall be built under these items. Where existing cement concrete walks and/or driveways in private lands do not meet the proposed line and grade at the street line they shall be rebuilt to meet the proposed line and grade in a manner satisfactory to the Engineer. Contractor shall construct cement concrete walks and driveway aprons where shown on the plans or as otherwise directed by the Engineer.

(b) Excavation (exclusive of rock excavation) shall be done and paid for under **Item 3**.

(c) The base for the cement concrete walk shall consist of a six (6) inch gravel base course and a two (2) inch course of dense graded crushed stone. Dimensions shall mean the finished compacted depth. The width of the walk shall be five (5) feet unless other widths are called for on the plans or by the Engineer.

(d) Cement concrete driveways shall consist of a six (6) inch gravel base course and a two (2) inch course of dense graded crushed stone topped with six (6) inches of concrete and/or as directed by the Engineer. Dimensions shall mean the finished compacted depth. The width of the driveway aprons shall be eight (8) feet unless other widths are called for on the plans or by the Engineer.

(dd) Cement concrete ramps shall consist of a six (6) inch gravel base course and a two (2) inch course of dense graded crushed stone topped with eight (8) inches of cement concrete and/or as directed by the Engineer. Dimensions shall mean the finished compacted depth. The width of the ramps (typically six (6) feet in width) will be determined in the field by the Engineer to best meet the field and end-use conditions.

**Materials**

(e) Cement concrete shall be of an air entrained type conforming to the current specifications of Section M4 of the Massachusetts Standard Specifications for Highways and Bridges supplement of June 19, 1985. Cement concrete shall have a 28 day compressive strength of 4000 PSI using 3/4 inch aggregate, and with an entrained air content of 7.0 + 1.0%.

ADD MIXTURES: Ordinary or emulsified carbon black – **two (2) pounds per cubic yard**, unless otherwise directed by the Engineer.

Upon delivery of each and every concrete mix, the Engineer shall be furnished with a slip clearly stating the design mix and the quantities of the above mentioned add mixture, and any other add mixtures present in the mix. Any concrete mix, which when tested on the job site is found to contain quantities of entrained air less than six (6) or more than eight (8) per cent or which yields a slump of less than three (3) inches or greater than

Materials (Continued)

five (5) inches shall be rejected, the decision of the Engineer shall be final. The Engineer reserves the right to change the above mix in order to meet the required strength test.

(f) All concrete shall be transit mix and shall conform to the current specifications of A.S.T.M. C-94. Hand mix concrete or machine mixed on the job concrete shall be used only when permitted by the City Engineer in writing.

(g) Premoulded asphalt expansion joints shall conform to the requirements of AASHTO Designation M33.

Method of Construction

(h) When new concrete is to be placed adjacent to existing walkways and/or driveways the Contractor shall shall cleanly cut a crisp joint cut by a means, and along a line, approved by the Engineer. No jackhammering of the existing walk and/or driveway shall be allowed.

(i) The walks shall be excavated or filled to a subgrade twelve (12) inches below and parallel to the finished grade as shown on the plans or as directed by the Engineer.

(j) Upon the prepared subbase, the gravel and dense graded crushed stone base course shall be constructed and rolled with rollers weighing not less than three (3) tons and not more than five (5) tons until the surface presents a firm unyielding surface satisfactory to the Engineer.

(k) Any area that is inaccessible to mobile mechanical equipment or in restricted areas shall be compacted with pneumatic rammers or powered hand tampers. Compaction shall be carried on until the density of the material is not less than ninety-five (95) percent of the Standard Proctor Density, as determined by Standard laboratory Compaction Test.

(l) All concrete walks and/or driveway elements shall be constructed with the use of side forms. The forms shall be clean, smooth and free from warp. Forms for straight concrete walks shall be two by fours (2"X 4"s) staked at intervals no greater than four (4) feet, forms for curved sections of concrete walks shall be four (4) inch strapping staked as directed by the Engineer, but in no case at intervals greater than four (4) feet. The forms shall be thoroughly braced and set to the proposed line and grade.

(m) All concrete slabs shall be constructed in one (1) course having a total finished depth of four (4) inches, all driveway elements shall be constructed in one (1) course having a total finished depth of six (6) inches and all ramps shall be constructed in one (1) course having a total finished depth of eight (8) inches. Top or wearing courses shall not be permitted.

(n) The end of every pour shall end at joints. Fresh concrete will not be allowed to be placed against previously laid concrete which has attained its initial set, excepting at full vertical joints.

(o) The walks and/or driveway aprons shall be blocked out in rectangular sections measuring not more than six (6) feet in any dimension. Transverse joints for a distance of twenty (20) feet, more or less, shall be dummy joints with an approved edging tool which shall score the joints a minimum of one (1) inch in depth. The concrete walks shall be placed in alternate slabs twenty (20) feet, more or less, in

Method of Construction (Continued)

length. The slabs for walks shall be separated by transverse premoulded asphalt expansion joints one-half (1/2) inch in thickness and a depth of not less than the full thickness of the walk set at right angles to the walk and to the side forms. No finishing operation shall be performed while free water is present. Finishing operations shall be delayed until all bleed water and water sheen has left the surface and the concrete has started to stiffen. After water sheen has disappeared, edging operations where required shall be completed. After edging and jointing operations, the surface shall be floated with either aluminum or magnesium floats. Immediately following floating, the surface shall be steel-troweled. If necessary, tooled joints and edges shall be rerun before and after troweling to maintain uniformity. After troweling, the surface shall be brushed by drawing a soft-bristled pushbroom with a long handle over the surface of the concrete to produce a nonslip surface. In conveying the concrete from the place of mixing to the place of deposit, the operation shall be conducted in such a manner that no mortar will be lost, and the concrete shall be so handled that the concrete will be of uniform composition throughout, showing neither excess nor lack of mortar in any one place.

(p) Premoulded asphalt expansion joints shall be placed adjacent to or around existing curb, walks, buildings and other structures designated by the Engineer.

(q) No concrete shall be placed on a frozen subbase nor shall concrete be poured when the air temperature is thirty-three (33) degrees Fahrenheit and falling, unless permitted by the Engineer, in which case the adequate means for the protection of the concrete must be provided for. No salt or other unauthorized admixtures shall be used. When completed, the newly laid concrete shall be protected from all traffic and the weather for a period of three (3) days. The Concrete shall be cured by spraying with an approved curing compound of a recognized brand applied in accordance with the manufacturer's instructions.

(r) This item shall also apply to cement concrete walks and/or driveways on private lands that have to be rebuilt to meet the proposed line and grade.

(s) Typical concrete driveways shall be constructed in one (1) course having a total depth of six (6) inches. In special rare cases, or as otherwise shown on the plans, an eight (8) inch depth shall be installed as directed by the Engineer. In such cases the Engineer shall pay the Contractor at a rate that is one and a half (1.5) times the contract bid for six (6) inch cement concrete driveways.

(t) All water service boxes, and/or any other service box, and/or any handhole, which falls within the walk/drive area, are to be raised such that the top plane of the utility cover is set flush with the finished sidewalk surface, and such work shall be carried out to the satisfaction of the Engineer. This work shall be paid for as part of **Item 42, 43 or Item 44**, whichever is applicable.

(u) In those cases where 'frozen' water service boxes are encountered the Contractor is to bring these special cases immediately to the attention of the Engineer, and upon his order to do so, the Contractor shall either remedy the situation by a means which is acceptable to the Engineer or shall otherwise retrieve corrective materials from the City of Newton Utility, and subsequently install them to the satisfaction of the Engineer and this work shall be paid under **Item 58@ Miscellaneous Work**.

(uu) Eight (8) inch thick cement concrete ramp systems shall be constructed of high-early cement concrete reinforced at a plane three (3) inches from the bottom face of the slab with nominal 8x8 Woven Wire Fabric (WWF).

Method of Measurement

- (v) Cement concrete walks shall be measured for payment by the **square yard**, complete-in-place.
- (w) Cement concrete driveway aprons and/or driveways shall be measured for payment by the **square yard**, complete-in-place.
- (x) Cement concrete ramp systems shall be measured for payment by the **square yard**, complete-in-place.
- (y) Measurement taken for **Item 42, 43 or 44** shall be by the **square yard** for material installed. **However, to facilitate the calculation for the cost adjustment of the Portland Cement as set forth under Item 0.303PC**, and as a supplemental means of verifying the cubic yards of cement concrete collectively used throughout the project site, the Contractor shall immediately, upon each delivery of cement concrete, furnish the Engineer with his own copy of the plant receipt which clearly shows the tare volume of cement concrete that is being furnished and installed, however the Engineer reserves the right to adjust the payment in the event the volume of material being discharged is either not entirely used, and/or the material is deemed unacceptable, and/or the shipment has arrived on the site as already partially used, and/or the field measured quantities for each respective slab thickness fails to confirm the invoiced yield.

Basis of Payment

- (z) Under **Item 42, 43, and Item 44** the Contractor will be paid the contract unit price **per square yard** for the cement concrete walks, driveway aprons or ramp systems respectively, complete-in-place, which work shall include the gravel and dense graded crushed stone base, as well as the premoulded asphalt expansion joints. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under these items as shown on the plans, as directed by the Engineer and/or as specified herein, inclusive of the raising of all service boxes to the finished grade.
- (aa) Excavation (exclusive of rock excavation) shall be done and paid for under **Item 3**.

**SECTION 21****Item 45 – DETECTABLE PRE-CAST TILE AT HANDICAP RAMP/CURB CUT****Description**

(a) The work under this item shall consist of furnishing and installing, by embedment, a series of factory manufactured Detectable Paver Warning Surfaces whose purpose is to raise the visibility and indicate the presence of a handicap ramp/curb cut location. These tiles will be accessed by the general public and the physically challenged pedestrian, therefore the installation of these surfaces will require the Contractor to exercise exceptional care in the placement and the finishing process' that are associated with these pavers. Under this item the Contractor is wholly responsible for complying with the latest ADA requirements.

**Materials**

**(b) The Detectable Paver shall be equal \* to a Red(15) @ 11 3/4" x 11 3/4"x 2" Non-Slip Concrete Paver Detectable Warning System as manufactured by;**

**Hanover Architectural Products  
240 Bender Road  
Hanover, PA 17331  
1-717-637-0500  
[www.hanoverpavers.com](http://www.hanoverpavers.com)**

\*An approved equal shall mean a factory fabricated system which meets the dimensional, structural and physical characteristics of the representative surface noted above and as specified herein. If the contractor chooses to seek approval for an alternative system then he must provide the City of Newton with a manufacturer's catalog cut, and upon further request, the Contractor shall provide a representative sample of the alternative tile, which clearly indicates the physical attributes of the system, as well as its compliance with the American Disabilities Act (ADA) standards, so that the City of Newton can readily perform a comparison assessment of the product(s).

"Equality" - An item equal to that named or described in the specifications of the contract may be furnished by the Vendor and the naming of any commercial name, trademark or other identification shall not be construed to exclude any item or manufacturer not mentioned by name or as limiting competition but shall establish a standard of equality only. An item shall be considered equal to the item so named or described if (1) it is at least equal in quality, durability, appearance, strength and design; (2) it will perform at least equally the function imposed by the general design for the work being contracted for or the material being purchased; and (3) it conforms substantially, even with deviations, to the detailed requirements for the item in the specifications. The name and identification of all materials other than the one specifically named shall be submitted to the City in writing for approval before the use or fabrication of such items. Subject to the provisions of M.G.L., Ch. 30, Sec. 39J, approval shall be at the sole discretion of the City, shall be in writing to be effective, and the decision of the City shall be final. The City may require tests of all materials so submitted to establish quality standards at the Vendor's expense. All directions, specifications and recommendations by manufacturers for installation, handling, storing, adjustment and operation of their equipment shall be complied with; responsibility for proper performance shall continue to rest with the Vendor.

(c) The Detectable Paver shall be of the Non-Slip type.



Materials (Continued)

(d) The Detectable Paver shall be new, structurally sound, and appropriate for safe use.

Method of Construction

(e) Manufacturer's warranties are to be assigned and delivered to the City of Newton.

(f) The Contractor shall install each Detectable Paver to meet the exact gradient tolerances prescribed in the current ADA guidelines which are shown in the City of Newton General Construction Details. Typically this gradient, from top to bottom, shall not exceed 7.5 % (or two inches (2'') over the twenty-four (24'') inch depth of the Tile). Nor shall the gradient, from side to side, exceed 1.5% (or one inch (1'') over the sixty inch (60'') width of the tile).

(g) In addition to complying with the latest ADA requirements the Contractor shall install each Detectable Paver in accordance with the directives shown on the plan.

(h) Typically each Detectable Paver shall be installed so that the front (street side) edge is set back twelve (12'') inches from the face of the curb ( so that six (6'') inches of cement concrete remain between the back of the curb and the edge of the tile).

(i) Cracked, chipped or deficiently domed pavers will not be accepted.

(j) The Contractor must plan his work so that the outlying cement concrete panels transition to the edge of the tile in a smooth and uniform manner.

(k) Any cement concrete placed adjacent to the pavers shall be brought flush with the surface edge of the tile and shall be finished with an edge trowel.

Method of Measurement

(l) Under **Item 45** the Contractor shall be paid **per square foot** of Detectable Pavers complete-in-place.

Basis of Payment

(m) Under **Item 45** the Contractor will be paid the contract unit price **per square foot** of Detectable Pavers, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 22****Item 46 – 3” TYPE I-1 BITUMINOUS CONCRETE WALKS & DRIVEWAYS  
(PUBLIC & PRIVATE PROPERTY)**Description

- (a) Bituminous concrete walks and/or drive aprons and/or driveways shall be constructed in locations shown on the plans or where directed by the Engineer.
- (b) Excavation shall be done and paid for under **Item 3**.
- (c) Bituminous concrete walks and/or drive aprons shall consist of a six (6) inch gravel base, eight (8) inches at driveways and a two (2) inch course of dense graded crushed stone, topped with a two (2) inch bituminous concrete Type I-1 wearing surface. All dimensions shall mean the finished compacted depths. The width of the walk shall be five (5) feet unless other widths are called for on the plans or by the Engineer.

Materials

- (d) Gravel and dense graded crushed stone shall conform to **Section 6** of these specifications.
- (e) This type of pavement shall be composed of mineral aggregate, mineral filler and bituminous material, plant mixed and laid hot. The mixing and materials shall conform to the current specifications as set forth in the Commonwealth of Massachusetts Department of Public Works Standard Specifications for Highway and Bridges, Sections 460 and M3, dated 1988 Bituminous concrete Type I-1.

Method of Construction

- (f) The walks and/or drive aprons shall be excavated or filled to subgrade ten (10) inches below and parallel to the finished grade. At driveways the walks shall be excavated or filled to subgrade twelve (12) inches below and parallel to the finished grade. The gravel base course and the dense graded crushed stone course shall then be constructed and rolled with roller weighing not less than three (3) tons and not more than five (5) tons until the surface presents a firm unyielding surface satisfactory to the Engineer.
- (g) **Section 6, paragraph (e) through (i)**, of these specifications shall apply.
- (h) All bituminous concrete walks and/or drive aprons shall be constructed with the use of side forms. The forms shall be clean, smooth, free from warp, of sufficient strength to resist springing out of shape and of a depth to conform to the thickness of the bituminous concrete wearing surface. The forms shall be well staked and thoroughly braced and set to the proposed line and grade.
- (i) The bituminous concrete shall consist of a three (3) inch finished depth of Type I-1 bituminous concrete laid in two (2) courses, a base or binder course of one and three-quarter (1 3/4) inch and a top or wearing course of one and one quarter (1 1/4) inch. All dimensions shall mean the finished depths. The mixture shall be placed from approved dump sheets or wheelbarrows fed directed from trucks. Dumping the mixture directly from trucks on the base will not be allowed.
- (j) **Paragraphs (h) to (k) inclusive, of Section 20 @ Item 42** of these specifications shall apply.

Method of Construction (Continued)

- (k) The separate courses shall be rolled with a self-propelled equally balanced tandem roller weighing not less than three (3) tons and not more than five (5) tons. In places inaccessible to a power roller, compaction shall be obtained by means of hand tampers.
- (l) The roller shall pass over the unprotected end of the freshly laid mixture only when the laying of the mixture is to be discontinued at the end of the days operation. In such cases, provisions shall be made for proper bonding with new surface mixture by cutting back over the full width and depth of the course. When laying of the course is resumed, the exposed edge of the joint shall be painted with a thin uniform coat of hot asphalt, just before the new mixture is laid.
- (m) The finished surface shall present an even and true contour. When tested with a ten (10) foot straight edge placed parallel to the center line of the surface course there shall be no deviation from a true surface in excess of one quarter (1/4) of one (1) inch. The sides when the forms are removed shall present a true line conforming to the line desired.
- (n) Landings and roundings at the street corners shall be constructed as specified in the construction details and/or as directed by the Engineer.

Method of Measurement

- (o) Bituminous concrete walks and/or drive aprons shall be measured for payment by the **square yard**, complete-in-place.

Basis of Payment

- (p) Under **Item 46** the Contractor will be paid the contract unit price **per square yard** for the bituminous concrete walks and/or drive aprons, complete-in-place, including the gravel and dense graded crushed stone. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.
- (q) **Excavation (exclusive of rock excavation) shall be done and paid for under Item 3.**

**SECTION 23****Item 47 – RESET AN EXISTING STONE BOUND****Description**

(a) Existing stone bounds that are incorrectly set or do not meet the proposed grade shall be reset as directed by the Engineer.

**Materials**

(b) The bounds shall consist of those now in the ground.

**Method of Construction**

(c) Before any bound is disturbed **the Contractor shall notify the City of Newton Engineering Division** and shall schedule that the bound be properly referenced. Once this work has been completed by the Engineers the Contractor shall commence with his work but shall not disturb the reference points in any way. Only after the bound has been reset, by a continuous tamping in six (6") inch increments all along its four (4') foot length, shall **the Contractor contact the Engineering Division** who shall check the bound point for accuracy. In the event the bound is found to be incorrectly set then the Contractor shall reset the bound at no expense to the City.

(d) No bounds less than four (4') in length shall be reset by the Contractor but shall be renewed with fresh bounds purchased and delivered under **Item 58**.

(e) When a bound to be reset does not have a drill hole in the top, such a hole shall be made in the center and it shall be one-quarter (1/4) inch in diameter and one-half (1/2) inch deep.

(f) All earth excavation and gravel refill shall be included in this item.

**Basis of Payment**

(g) Under **Item 47** the Contractor will be paid the contract price for **each** reset stone bound, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

**SECTION 24****Item 48 - FLAGSTONE WALK**Description

(a) Where existing flagstone walks in private lands do not meet the proposed line or grade at the street line such walks shall be rebuilt so as to meet the proposed line and grade at the street line. Walks shall be rebuilt in such a manner that the finished work shall be similar to the existing work and as approved by the Engineer.

Materials

(b) Flagstone shall be similar to the existing flagstone and as approved by the Engineer.

(c) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.

(d) Cement concrete shall conform to the specifications set forth in **Section 20** of these specifications.

(e) Gravel shall conform to **Section 6** of these specifications.

Method of Construction

(f) The walks shall be excavated or filled to subgrade ten (10) inches below and parallel to the finished grade.

(g) Upon the prepared subbase a six (6) inch gravel base shall be constructed and rolled with rollers weighing not less than three (3) tons and not more than five (5) tons until the surface presents a firm unyielding surface satisfactory to the Engineer.

(h) **Section 6, paragraph (e) through (i)**, of these specifications shall apply

(i) Upon the gravel base a four (4) inch cement concrete base shall be constructed.

(j) The flagstone shall then be laid in mortar to a design and finish similar to the existing flagstone walk.

(k) All walks including the concrete base shall be constructed with the use of side forms. The forms shall be clean, smooth, free from warp, of sufficient strength to resist springing out of shape and of a full depth to conform to the thickness of the walk. The forms shall be well staked, thoroughly braced and set to the proposed line and grade.

(l) All other types of flagstone walks shall be rebuilt similar to the existing walk both in workmanship and materials used and as approved by the Engineer.

Method of Measurement

(m) Flagstone walks shall be measured for payment by the **square yard**, complete-in-place.

Basis of Payment

(n) Under **Item 48** the Contractor will be paid the contract unit price per **square yard** for the flagstone walks, complete-in-place, including excavation, gravel base and concrete base. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 24****Item 49 - RESET/REBUILD BRICK WALKS or PAVER BLOCK/COBBLESTONE AREAS****Description**

(a) Where existing brick walks or where special paver blocks do not meet the proposed line or grade at the street line or any other area adjacent to the reconstructed area(s), such walks and areas shall be rebuilt so as to meet the proposed line and grade at the street line. Walks and/or paver blocks shall be rebuilt and reset in such a manner that the finished work shall be similar to the existing work as approved by the Engineer.

**Material**

- (b) Brick and/or paver block shall be similar to the existing brick and as approved by the Engineer.
- (c) Mortar shall consist of cement and sand mixed in the proportion, by volume, of one (1) part cement and two (2) parts sand. Sand shall be clean, sharp, and shall have a gradation common to type known as "Brick Sand". Lime shall not be used.
- (d) Cement concrete shall conform to the specifications set forth in **Section 20** of these specifications.
- (e) Gravel shall conform to **Section 6** of these specifications.

**Method of Construction**

- (f) The walks shall be excavated or filled to subgrade ten (10) inches below and parallel to the finished grade.
- (g) Upon the prepared subbase a six (6) inch gravel base shall be constructed and rolled with rollers weighing not less than three (3) tons and not more than five (5) tons until the surface presents a firm unyielding surface satisfactory to the Engineer.
- (h) **Section 6, paragraph (e) through (i)**, of these specifications shall apply
- (i) Upon the gravel base a four (4) inch cement concrete base shall be constructed.
- (j) The flagstone shall then be laid in mortar to a design and finish similar to the existing flagstone walk.
- (k) All walks including the concrete base shall be constructed with the use of side forms. The forms shall be clean, smooth, free from warp, of sufficient strength to resist springing out of shape and of a full depth to conform to the thickness of the walk. The forms shall be well staked, thoroughly braced and set to the proposed line and grade.
- (l) All other types of flagstone walks shall be rebuilt similar to the existing walk both in workmanship and materials used and as approved by the Engineer.

**Method of Measurement**

- (m) Brick walks or paver block/cobblestone areas shall be measured for payment by the **square yard**, complete-in-place.

Basis of Payment

(n) Under **Item 49** the Contractor will be paid the contract unit price per **square yard** for the rebuilt brick walk and/or paver block area, complete-in-place, **including excavation and disposal of excess and/or undesirable material(s), and for the gravel base and subsequent concrete base.** The unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.



**SECTION 24****Item 50 - GRAVEL WALKS & DRIVEWAYS****Description**

(a) When existing gravel driveways in private lands do not meet the proposed line or grade at the street line they shall be rebuilt so that they meet the proposed line and grade in a manner satisfactory to the Engineer.

(b) **Excavation shall be done and paid for under this item.**

(c) Gravel driveways shall consist of a six (6) inch compacted gravel base course and a two (2) inch course of dense graded crushed stone topped with a one-half (1/2) inch depth of stone screenings. Dimensions shall mean the finished compacted depth.

**Materials**

(d) **Section 6** of these specifications shall apply.

**Method of Construction**

(e) The gravel driveways shall be excavated or filled to subgrade eight and one-half (8 1/2) inches below and parallel to the finished grade. The gravel base course and the dense graded crushed stone course shall then be constructed and rolled with rollers weighing not less than three (3) tons until the surface presents a firm and unyielding surface satisfactory to the Engineer. During the process of compacting the dense graded crushed stone course water shall be applied at such a rate and in a manner, so that in the judgement of the Engineer, the optimum moisture content of the material has been attained.

(f) The constructed base shall then be topped with stone screenings and compacted and watered as described in **paragraph (e)** of this section.

(g) **Section 6, paragraph (e) through (i)** of these specifications shall apply.

**Method of Measurement**

(h) Gravel driveways shall be measured for payment by the **square yard**, complete-in-place.

**Basis of Payment**

(i) Under **Item 50** the Contractor will be paid the contract unit price per **square yard** for constructing gravel driveways, complete-in-place, **including preparatory excavation and the disposal of excess material(s), and for the furnishing of gravel and dense graded crushed stone, stone dust and stone screenings**. The unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 24****Item 51 – HANDSET EDGING MATERIALS (COBBLE/EDGESTONES, ETC.)**Description

(a) Under this item the Contractor is to reset existing edging materials which are necessarily disturbed by the construction process. This work is typically performed by hand to reset edging materials that consist of any retaining and/or edging device which is traditionally and easily installed without the aid of mechanical means, and which are typically installed for the purpose of defining the edges of pavement and/or garden areas.

Materials

(b) Existing edging materials are to be carefully removed by hand, and subsequently stockpiled in a manner that will preserve their aesthetic value.

Method of Construction

(c) Existing edging materials are to be reset by hand in such a manner that they present an aesthetically pleasing appearance which either meets or exceeds the original installation. These materials are to be set in the same fashion as originally set and are to be brought snug against the back edge of the newly installed walks. All installations shall be to the satisfaction of the Engineer.

Method of Measurement

(d) Measurement for payment shall be by the **linear foot**.

Basis of Payment

(e) Under **Item 51** the Contractor will be paid the contract unit price **per linear foot** for resetting by hand, all edging materials, complete in place, including the initial removal and storage of existing materials, as well as any excavation, form work and/or saw cutting, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 25****Item 52 - RESET HEDGE & TREES UP TO 2" TRUNK DIAMETER****Description**

- (a) Existing hedges, shrubs, plants and certain designated trees that do not meet the proposed line or grade shall be transplanted to new locations to meet the proposed line and grade.
- (b) All transplanting shall be maintained by the Contractor at his own expense until the work is complete and accepted. The Contractor shall guarantee that every shrub, tree or plant transplanted by him under this contract shall be in good, healthy and flourishing condition of active growth at the end of one (1) year from the date of acceptance of the contract. The Contractor shall replace with satisfactory specimens of the same size and variety all plants, shrubs and trees that do not survive the guarantee period.

**Materials**

- (c) Loam shall be clear, rich, dark colored loam friable, reasonably well supplied with plant food, free from excess swamp muck, peat, clay, silt, stones, sods, roots, gravel, sand, subsoil or other foreign material. All loam furnished for this work shall be approved by the Engineer.
- (d) Peat shall be reed or sedge peat unless otherwise directed. Peat shall conform satisfactorily to the following analysis:
1. Dark brown in color.
  2. Raw, fine, shredded and low in woody material.
  3. Water absorbing capacity 350 - 800 per cent.
  4. Acid 4.5 - 6.0 pH.
  5. Organic matter 90 per cent.
  6. Weight per cubic foot not over 25 pounds.
- (e) Mulch shall be leaf mold consisting of black natural soil resulting from the complete or nearly complete decomposition of previous crops of leaves.
- (f) Manure shall be well rotted, unleached stable manure, not less than eight (8) months and not more than two (2) years old. It shall be free from sawdust, shavings of any kind and shall not contain over twenty-five (25) per cent straw. No manure shall be used until found satisfactory after sampling and testing.
- (g) Arsenate of Lead shall be a commercial product of recent manufacture in dry powder form, and shall be of the following analysis:

Active ingredients, Lead Arsenate	96%
Inert ingredients	4%

Total arsenic expressed as Metallic Arsenic, 19.56 per cent. Arsenic in water soluble form expressed as Metallic Arsenate, 0.50 per cent. Arsenic when packed shall contain not over 0.75 per cent water soluble arsenic oxide and at least thirty (30) per cent arsenic oxide. The Contractor shall submit the manufacturer's statement of analysis.

Materials (Continued)

(h) Arsenate of Lead shall be a commercial product of recent manufacture in dry powder form, and shall be of the following analysis:

Active ingredients, Lead Arsenate	96%
Inert ingredients	4%

Total arsenic expressed as Metallic Arsenic, 19.56 per cent. Arsenic in water soluble form expressed as Metallic Arsenate, 0.50 per cent. Arsenic when packed shall contain not over 0.75 per cent water soluble arsenic oxide and at least thirty (30) per cent arsenic oxide. The Contractor shall submit the manufacturer's statement of analysis.

(i) Fertilizer shall consist of bone meal, fine ground, steam-cooked, packing house bond, with a minimum analysis of twenty-three (23) per cent phosphoric acid and 2.47 per cent of nitrogen.

Method of Construction

(j) All shrubs, plants and trees to be transplanted shall be dug with care and skill immediately previous to transplanting. Special precautions shall be taken to avoid injury to or removal of fibrous roots. All plants to be transplanted shall be balled and burlapped and shall be so lifted as to retain as many fibrous roots as possible.

(k) The new location shall be excavated and backfilled with loam and fertilizer as directed by the Engineer. The dimensions for the pits excavated shall be as follows: for trees, at least two (2) feet greater in diameter than the ball of earth or spread of roots and depths as directed. For shrubs, two (2) feet in diameter and two (2) feet deep. For vines, one and one-half (1 1/2) feet in diameter or three (3) feet in width and one and one-half (1 1/2) feet deep.

(l) The tree, shrub or plant to be transplanted shall be planted by excavating a hole in the backfilled loam of sufficient size to take the roots without crowding. The tree, shrub or plant shall be placed at the proper depth in the loam pit and the pit partially filled with loam. The tree, shrub or plant shall then be shaken and the loam lightly tamped to insure against any pockets in the loam. The pit shall then be half filled with loam tamped and puddled with water, and allowed to soak for fifteen (15) minutes. The remainder of the pit shall then be filled, lightly tamped and puddled in a like manner.

(m) Backfill materials for pits of trees, shrubs and plants shall consist of loam containing an admixture of fifteen (15) per cent by volume of baled peat or a suitable domestic peat moss. All trees and plants shall have a mulch of well rotted stable cow manure to a depth of not less than two (2) inches over the entire surface of the prepared pits or beds.

(n) Fertilizer shall be uniformly mixed with the planting soil throughout at the following approximate rates for the various classes of plant material: one (1) pound per tree, one-quarter (1/4) pound per shrub, one-tenth (1/10) pound per vine.

(o) Only upon the direction of the Engineer shall trees two (2) inches or over in diameter that have been transplanted shall be guyed by means of guy cables placed one hundred twenty (120) degrees apart around the tree. The tree shall be properly protected from the cable by splints, burlap or other protective collar, in a manner satisfactory to the Engineer. This work shall only be performed at the request of a private property owner and at their own peril.

Method of Construction (Continued)

(p) After the tree has been transplanted the surface of the entire area of the filled tree pit shall be covered with leaf mold or a mulch as directed by the Engineer to a loose depth of four (4) inches, over which a light covering of branches or earth may be placed to prevent the mulching material from blowing away.

(q) All transplanting shall be kept in a healthy, growing condition by watering, weeding, cultivating, pruning, spraying, trimming, tightening of the guy ropes, and by performing other necessary operations. Watering shall be done immediately after transplanting and each day thereafter, if directed, for a period of three (3) weeks. Spraying shall be done, if directed, with arsenate of lead in a manner satisfactory to the Engineer.

Method of Measurement

(r) Reset **hedges** shall be measured for payment **by the linear foot**, complete-in-place.

(s) The number of trees and shrubs, in place and in healthy condition indicating proper handling shall be by the **linear foot as diametrically measured across each root ball**.

Basis of Payment

(t) Under **Item 52** the Contractor will be paid the contract unit **price per linear foot of reset hedge, or in the case of trees and shrubs the diametrical width of each root ball**, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidental work necessary to complete the work under these items as shown on the plans, as directed by the Engineer and as specified herein.

**SECTION 26****Item 53 – REMOVE & RESET or THE SETTING OF A STREET SIGN POST****Description**

(a) Street sign posts shall be removed and reset, and/or installed, where shown on the plans or where directed by the Engineer, and/or shall also apply to new signposts and signs furnished by the City of Newton.

**Materials**

(b) When existing street sign posts and/or signs must be replaced they will be furnished by the City of Newton, and picked up by the Contractor at the Traffic Division of the City of Newton.

(c) Cement concrete shall be Class B.

**Method of Construction**

(d) The sign post shall be set in a concrete foundation three (3) feet below the surface of the ground and fourteen (14) inches in diameter as specified in the construction details.

**Basis of Payment**

(e) Under **Item 53** the Contractor will be paid the contract unit price for **each** street sign removed and reset, and/or any new signpost (and sign) furnished by the City of Newton, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

**SECTION 27****Item 54 - LOAM BORDERS**Description

(a) Loam borders shall be built between the inside edge of the curbing and the edge of the sidewalk in locations shown on the plans or designated by the Engineer. **The depth of the loam shall be six (6) inches measured in its finished state.** The finished grade of the loam border shall be such that the edges of the loam border and the sidewalk shall meet flush and at the same grade after rolling. The same shall apply on the inside edge of the curb.

Materials

(b) Loam shall be clear, rich, dark colored loam friable, reasonably well supplied with plant food, free from excess swamp muck, peat, clay, silt, stones, sods, roots, gravel, sand, subsoil or other foreign material. All loam furnished for this work shall be approved by the Engineer.

(c) Limestone shall be ground limestone that will pass a No. 20 sieve, and at least seventy-five (75) per cent will pass a No. 100 Sieve. Ground limestone shall have a neutralizing value satisfactory to the Engineer.

(d) Fertilizer shall be furnished in containers plainly marked with the chemical analysis of the product and it shall have one of the following compositions by weight.

	10-6-4	8-6-4	7-7-7
Nitrogen	10% min.	8% min.	7% min.
Available Potash Acid (P <sub>2</sub> O <sub>5</sub> )	6% min.	6% min.	7% min.
Water Soluble Potash (K <sub>2</sub> O)	4% min.	4% min.	7% min.

At least fifty (50) per cent by weight of the nitrogen content of the fertilizer shall be derived from organic materials.

(e) Grass seed shall be of the previous year's crop and in no case shall the weed seed content exceed one (1) per cent by weight. Grass seed shall conform to the requirements of the following table:

	Proportion	Germination Minimum	Purity Minimum
Creeping Red Fescue	50%	85%	95%
Kentucky Blue	25%	85%	90%
Domestic Rye	10%	90%	98%
Red Top	10%	85%	92%
Ladino Clover	5%	85%	96%

(f) The several varieties of seed shall be furnished and delivered separately, and mixed after delivery as directed by the Engineer.

(g) The responsibility for satisfactory results shall rest entirely with the Contractor regardless of any tentative approval given by the Engineer.



Method of Construction

(h) The loam borders shall be excavated to subgrade six (6) inches below and parallel to the finished grade. Loam shall then be spread on the subgrade in sufficient quantities to produce without rolling and after material settlement has taken place, a depth of four (4) inches. On this layer of loam ground limestone shall be spread at the rate of one-half (1/2) pound per square yard and thoroughly incorporated into the loam for the total depth, by harrowing or spading and raking. The surface shall be brought smoothly to a grade parallel to the finished grade.

(i) The second layer of loam shall then be spread in sufficient quantities to produce after final rolling the required finished depth. At least five (5) days shall elapse after the application of the ground limestone, and then fertilizer shall be spread on the top layer of loam at the rate of two tenths (2/10) of a pound per square yard. The full depth of the loam shall then be spaded, harrowed and graded to the finished grade.

(j) After the grass plots have been prepared as described above, grass seed shall be carefully and appropriately sown at the rate of three and six tenths (3 6/10) pounds to each one hundred (100) square yards. The surface shall then be raked until the grass seed is thoroughly covered with a thin layer of loam. Finally the surface shall be rolled with a hand roller weighing not more than one hundred (100) pounds per foot of width.

(k) The Contractor shall insure a good catch of grass and shall be responsible for the first cutting of the grass. He shall maintain seeded areas during construction and he shall reloam, regrade and reseed any area which in the opinion of the Engineer requires such.

Method of Measurement

(l) Measurements taken for payment shall be by the **square yard** of the finished work, complete-in-place.

Basis of Payment

(m) Under **Item 54** the Contractor will be paid the contract unit price per **square yard** for loam borders, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein, inclusive of the raising of service boxes to the finished grade.

**SECTION 28****Item 55 – REGRADING, LOAMING & THE SEEDING OF LAWNS**Description

(a) Lawns adjacent to the street being built that do not meet the proposed line or grade shall be regraded to meet the proposed line and grade. **The depth of loam used in regrading shall be eight (8) inches measured in its finished state** and the work shall conform to the dimensions shown on the construction details.

Materials

(b) Loam, Limestone, Fertilizer, and Grass Seed (for slopes less than 3:1), shall conform to **Section 27 @ Item 54, paragraphs (b)-(g)** of these specifications.

(c) Grass seed for slopes graded at the rate of 3:1 and steeper shall conform to the requirements of the following table:

	Proportion	Germination Minimum	Purity Minimum
Creeping Red Fescue	50%	85%	95%
Kentucky Blue	25%	85%	90%
Domestic Rye	10%	90%	98%
Red Top	10%	85%	92%
Ladino Clover	5%	85%	96%

Method of Construction

(d) **Section 27 @ Item 54, paragraphs (h)-(k)** of these specifications shall apply.

(e) The seed mixture specified for slopes graded at the rate of 3:1 and greater shall consist of a tough hardy type. The mixture for slopes less than 3:1 and for grass plots shall be of the finer type which will produce a fine turf.

(f) Lawns shall be excavated to subgrade eight (8) inches below and parallel to the finished grade. Loam shall then be spread on the subgrade in sufficient quantities to produce without rolling and after material settlement has taken place a depth of six (6) inches. On this layer of loam ground limestone shall be spread at the rate of one-half pound per square yard and thoroughly incorporated into the loam for the total depth, by harrowing or spading and raking. The surface shall be brought smoothly to a grade parallel to the finished grade.

Method of Measurement

(g) Measurements taken for payment shall be by the **square yard** of the finished work, complete-in-place.

Basis of Payment

(h) Under **Item 55** the Contractor will be paid the contract unit price per **square yard** for all regraded lawns, complete-in-place, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein.

**SECTION 29****Item 56 – DUST CONTROL (CHEMICAL TREATMENT)**Description

(a) The Contractor is responsible for all safety aspects associated with the application of the Calcium Chloride which shall be furnished and applied for dust control purposes to the surface of the subgrade, or elsewhere as directed in accordance with these specifications.

Materials

(b) Calcium Chloride shall conform to the requirements of A.A.S.H.T.O. – M144, Type I or Type II.

Method of Construction

(c) Calcium Chloride shall be uniformly applied at the rate of one and one-half (1-1/2) pounds per square yard, or at any other minimal rate which does not jeopardize the safety of the travel way yet serves to control the dust condition(s). Calcium Chloride is to be evenly spread to prevent concentrated areas of Calcium Chloride.

(d) Chemicals are to be strategically applied so as not to track onto adjoining roadways. The Contractor is advised to scrutinize each area on a case by case basis, and apply the chemicals in such a manner that the wheels of the vehicular traffic do not deposit any residual chemicals onto the pavement of any adjoining roadways.

(e) The Contractor shall either arrange for, or otherwise maintain on site, an adequate supply of Calcium Chloride for the purpose of applying it within one hour of a notice to do so upon the direction of the Engineer.

Method of Measurement

(f) Calcium Chloride will be measured by **the pound** and the quantity to be paid for shall be the actual weight of such material furnished and applied, complete-in-place.

Basis of Payment

(g) Under **Item 56** the Contractor will be paid the contract unit price **per pound** for Calcium Chloride for dust control, complete-in-place, which unit price shall be full compensation for all labor, materials, tools, equipment, and all incidental work necessary to complete the work under this item as shown on the plans, as directed by the Engineer, and as specified herein.

**SECTION 30****Item 57 – MATERIALS TESTING ALLOWANCE****Description**

- (a) The Contractor shall include in his bid an allowance of **two thousand dollars (\$2,000.00)** for cylinders and for other tests conducted in the field and/or the laboratory as required by the Engineer for the control of the concrete, reclaimed pavement material, bituminous concrete pavement, or for any other material.
- (b) The City will reimburse the Contractor the full amount of the material testing services provided when approved by the Engineer. The Contractor is required to submit to the City Engineer copies of evidence of payment.

**Basis of Payment**

- (c) Under **Item 57** the Contractor will be paid the full invoice amount for approved and/or authorized material testing services conducted by an independent and qualified laboratory . **Under no circumstances will the City of Newton pay for any testing procedures which unreasonably exceed accepted industry standards (based upon three (3) additional independent quotes for similar testing procedures).**

**SECTION 31****Item 58 - MISCELLANEOUS WORK ALLOWANCE (ENGINEERS DISCRETION)****Description**

The work of this section is to complete certain items of work which are not called for under the specifications or indicated on the plans but which are done at the special request of the Engineer. These items of work shall be completed only when and as directed by the Engineer. The Contractor may not proceed with any work under this section without the written notice of the Engineer to complete the work under the "Miscellaneous Work Allowance".

The sum to be allowed for the work of this item shall be **six thousand dollars (\$6,000.00)**.

All work under this item shall be paid for by one or more or a combination of the following methods at the City's discretion.

- a. Unit prices previously bid.
- b. An agreed lump sum.
- c. The actual cost of:
  1. Labor, including foremen;
  2. materials entering permanently into the work;
  3. the ownership or rental cost of construction plant and equipment during the time of use on the extra work;
  4. power and consumable supplies for the operation of power equipment;
  5. insurance;
  6. social security and old age and unemployment benefits.

To the cost under c. there shall be added a fixed fee to be agreed upon but not to exceed fifteen per cent (15%) of the actual cost of the work. The fee shall be compensation to cover the cost of supervision, overhead, bond, profit and any other general expense.

The City shall retain a cash credit in full or in part, in the event that the final cost of materials and/or equipment is lower than the original cash allowance provided.

To the estimated cost or actual cost under (c) for work performed by subcontractors, there shall be added a fixed fee of ten per cent (10%) as compensation to cover the subcontractor's cost of supervision, overhead, profit and any other subcontract general expense, plus ten per cent (10%) as compensation to cover the General Contractor's cost of supervision, overhead, profit, bond and any other general expenses.

**Basis of Payment**

Payment for work completed under **Item 58** shall be as specified above, in full or in part, as approved by the Engineer.

**SECTION 32****Item 59 – FURNISH AND MOUNT SAFETY & SPECIALTY SIGNBOARDS  
(INCLUDING THE POST SYSTEM)****Description**

- (a) Safety and specialty signboards shall be placed, as directed by the Engineer, and/or as described in the City of Newton “General Construction Details” and/or as shown on the plans. The Contractor is not to order any signboards until he has coordinated this effort with the Engineer in order to identify the maximum number, and various types of signboards, that should be contained in the initial sign making order as every new signboard, once delivered, is to be reused. The Contractor is to order new signboards as the Engineer may further direct as the construction activities progress, however, no payment will be made for any new signboard which is damaged or lost. Damaged or lost signs are to be replaced at the Contractors own expense.
- (b) When scope of the project involves multiple site locations signboards and posts are to follow the construction progress, being moved from zone to zone, with signboards and posts being the first mobilization element to be established throughout each project zone before any other construction activity takes place within that particular zone.
- (c) Specialty signboards, bearing unique messages, shall be fabricated by special order of the Engineer to address any and all site specific informational requirements.
- (d) Once established, all signboards and/or post systems are to be maintained for the duration of the construction activities. Any damaged signboards and/or post systems are to be immediately replaced at the Contractors own expense without any additional compensation.

**Materials**

- (e) Plywood signboards panels shall be fabricated from ¾” thick medium Density Overlaid (MDO) Exterior Type, A-B both sides surface in natural color and the whole conforming with the requirements and tests for the above as set forth in U.S. Products Standards PSI-74 for Construction and Industrial Plywood. All plywood shall bear the grade trademark of an approved testing agency. The entire area of the signs shall be reflectorized with the reflective sheeting conforming to Section M9.30.0 of the Commonwealth of Massachusetts, Standard Specification for Highway and Bridges, dated 1988. All applicable portions of Sections 828 and 840 of the aforementioned specifications shall also apply.
- (f) Posts shall be constructed of sturdy material(s) and adequately installed so as to withstand ninety (90) mile an hour sustained winds when the respective sign is mounted in place. No payment will be made for posts, and/or support systems, which do not clearly meet this criteria. No additional payment will be made to replace any damaged post systems.

**Method of Construction**

- (g) All signboards shall be fastened in the manner described in the Construction Details, and/or as shown on the plans, or as directed by the Engineer.

Method of Construction (Continued)

(h) The Contractor shall be responsible for maintaining all signboards and posts for the duration of the contract and all signs and/or posts damaged or lost during construction shall be replaced by the Contractor at his own expense.

(i) Upon completion of the Contract, all safety and specialty signboards shall become the property of the City of Newton. Signboards shall be delivered by the Contractor to a City location designated by the Engineer, where the Contractor is to neatly stockpile the signboards. The City reserves the right to limit the number of signs it receives, and to further pick and choose which signs are to be delivered to the City of Newton. In the event the City has no desire to take control of the signs, then the Contractor is to dispose of them as he so chooses, however, in no case is any sign to be discarded in this manner until such time a the Engineer authorizes its release.

Method of Measurement

(j) Measurement for payment of signboards with the post system and/or the mounting effort, shall be based upon the **square foot of surface area for each new and professionally made signboard**. No additional payment will be made for field made signboards which are ordered by the Engineer and which bear a temporary hand-written message.

Basis of Payment

(k) Under **Item 59** the Contractor will be paid the contract unit price **per square foot for each new professionally made safety and specialty signboard authorized by the Engineer**. The express intent, under this item is to re-use the signboards, moving the signboards from project zone to project zone as the construction operation progress, without any further additional compensation under this item. Under this item signboards are to be furnished, complete-in-place **inclusive of post systems**, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item, as shown on the plans, as directed by the Engineer and as specified herein. No additional payment will be made for sign post systems which are damaged and replaced.



**SECTION 33****Item 60 – ALLOWANCE FOR PAYMENT OF POLICE OFFICERS****Description**

- (a) The Contractor shall include in his bid an allowance of ninety **thousand dollars (\$90,000.00)** for payment of Police traffic officers. This allowance will be used as a basis for comparison of bids only.
- (b) The City will reimburse the Contractor for the full amount of charges for Police services.
- (c) **Article 1** of the Special Conditions of the Contract shall apply.
- (d) Under this item the Contractor shall be responsible for ordering, and for cancelling details on a day to day basis. In the event the Contractor has ordered police details, and does not give the police department ample advance notice that work has been cancelled for that day due to inclement weather or for any other reason, then the Contractor shall bear the expense of that billed detail.
- (e) The Contractor shall completely familiarize himself with the current policies regarding and/or regulating police details. In the event police detail requests cannot be completely filled to cover the Contractor's scheduled work for any particular day then the Contractor shall adjust his work schedule accordingly and shall not hold the City responsible for any loss of time, or for any other financial loss. The City of Newton will however grant an extension of time to the original contract term for each day lost due to insufficient police staffing.

**Basis of Payment**

- (f) Under **Item 60** the Contractor shall submit paid invoices to the Engineer. The Contractor shall then be reimbursed the full invoice amount for City of Newton Police Department charges and/or, when applicable, for Massachusetts State Police charges, as full reimbursement under the allowance for payment of Police officers.
- (g) The original invoice issued by the billing authority must be submitted to the Engineer for payment under this item.
- (h) Scheduling and coordination of Police Officers will be paid for under **Item 1**.

**SECTION 34****Item 61 – WARNING AND/OR SAFETY DEVICES FOR CONTROL OF CONSTRUCTION OPERATIONS**Description

(a) Work under this section consists of providing, positioning, repositioning and maintaining various traffic control devices, inclusive of the 'RC' or 'D' Type drum devices, for the guiding and safety of the traveling public, and for the safety of the working personnel during construction and maintenance operations, and includes channelizing, barricades, detouring and other warning devices, as directed by the Engineer, and/or as requested by the Police Detail Officer, and/or as shown on the plans.

(b) Under this item the Contractor is solely responsible for all safety aspects of the Contract subject to the Provisions of **Article 14** of the General Conditions of the Contract.

Materials

(c) Drums shall be Type IV reflectorized in their entire white and orange areas with reflective sheeting. Barricades along with non-metallic reflectorized drums shall conform to Section M9 of the Mass. DPW Standard Specifications for Highways and Bridges. Newly developed products providing equivalent target value and stability that are approved by the Massachusetts Highway Department may be used. All barricades and drums shall be maintained in a satisfactory manner, including the removal of dirt or road film that causes a reduction in sign reflective efficiency.

(d) Each barricade and drum used for warning or channelizing at night shall be equipped with a flashing light. All devices that are not lighted at dusk shall be repaired or replaced.

(e) Materials required under this section need not be new, but must be in first class condition and acceptable to the Engineer. Any materials, that in the judgement of the Engineer, are unsatisfactory in appearance and/or performance, shall be removed and immediately replaced by acceptable units. However, the Contractor is solely responsible to monitor and verify the conditions of the materials, and to take immediate action to remedy any deficiencies otherwise brought to his attention.

(f) Signs for Type 'RC' and 'D' devices are to comply with all applicable provisions of **Section 32**.

Method of Construction

(g) All warning and directional devices shall be subject to removal, replacement and/or repositioning as often as is necessary. Deployment of such devices shall be the sole responsibility of the Contractor, therefore ample number of devices must be maintained at all times and at no time shall vehicular or pedestrian traffic be a cause for concern.

(h) The Contractor is to work closely with the Safety Officer of their insurance agent to determine, and establish, on an ongoing systematic basis, as the construction operations progress, the number of reflectorized devices that are needed in order to eliminate any and all potential safety hazards to the general public.

(i) Cones of non-reflectorized warning devices shall not be left in operating position when the day's operations have ceased.

Method of Construction (Continued)

(j) Further, all signs mounted on Type 'RC' and 'D' type devices are to be turned away from traffic at days end when no longer in use.

Method of Measurement

(k) The Engineer shall make **percentage payments** as he deems appropriate during the course of these activities.

Basis of Payment

(l) The contract **lump sum** price under **Item 61** shall constitute full payment for all materials, labor and equipment required or incidental to the work described above and/or as shown on the plans. Any devices which are lost, stolen, destroyed, or deemed unacceptable while their use is required on the project shall be replaced without additional compensation.

(m) Signboards for Type 'RC' and Type 'D' drum devices will be paid under **Section 32 Item 59**.

**SECTION 35****Item 62 – TREE PROTECTION****Description**

(a) Under this item the Contractor is to coordinate the installation of the tree protection measures with the City of Newton Director of Urban Forestry who shall make the final designation(s) as to what trees are to be ultimately protected. The Contractor shall subsequently furnish and install the appropriate tree protection measures as shown on the plans and as specified herein.

(b) Once installed, the Contractor shall be responsible for the maintenance and/or immediate repair of all tree protection components.

**Materials & Method of Construction**

(c) Tree protection shall be manufactured from an approved recycled material, the resulting composite being splinter-free units of a minimum 2"x 4"x 8' dimension and dressed on all four sides with each piece being independently placed to provide no more than four to six inches (4"- 6") of space between each piece.

(d) The split-pipe type of tree protection shall be of such a size that the entire circumference of the tree trunk is shielded from damage. These sections of SDR 35 grade pipe shall be carefully fitted in the field, overlapped if required, and each section is to carefully burnished to render it free of sharp edges.

(e) The dimensional units shall be secured with four foot (4') wide manufactured PVC safety fence and heavy-duty nylon cinch 'cable' ties, or ½" wide rust-proof steel metal bands with matching cinch clips closed with a crimping tool, or ¾" heavy-duty nylon cinch 'cable' ties. Such securing means shall be wrapped fully around the dimensional units and subsequently tightened in such a manner as to render the protective units both immovable and impact resistant once they are set. **No wire, nails or screws, of any type, are to be used in any tree protection system.**

(f) Upon the completion of the project, and/or upon orders to do so, the Contractor is to remove and immediately dispose of the temporary tree protection and shall subsequently restore the area around and about the tree to its original condition, inclusive of trimming any grass, and such work shall be done to the satisfaction of the Engineer.

**Method of Measurement**

(g) Under **Item 62** the Contractor will be paid the contract unit price **per protected tree**.

**Basis of Payment**

(h) Under **Item 62** the Contractor will be paid the contract unit price **per protected tree**, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein, inclusive of the removal and disposal costs subsequent to the completion of the sitework.

**SECTION 36****Item 63 – FURNISH & INSTALL A 4 DUCT @ 4” DIAMETER SCHEDULE 40 PVC PIPE  
(CONCRETE ENCASED) CONDUIT SYSTEM****Description**

(a) Under this item the Contractor is to coordinate with the Engineer to define the exact locations for each respective installation, and the Contractor shall subsequently install the proposed four (4) duct conduit system (which will ultimately serve to provide the Lasall College campus with future telecommunications capabilities).

**Materials & Method of Construction**

- (b) Materials and the Method of Construction shall comply with the directives as shown on the plans.
- (c) In the event the conduit cannot be laid in a true parallel line the Contractor shall veer the conduit to present an even sweep throughout its length or shall otherwise install no more than 4 @ 1/16 (22.5 degree) bends to achieve the desired deflection. This work shall be carried out under the direction of the Engineer whose decision shall be final since the future pulling of cables through the conduit cannot be compromised.
- (d) Ties to the marker stakes, with a notation of the depth of the conduit, shall be made by the Contractor on a format acceptable to the Engineer. The ties shall be taken to permanently fixed points, and with no less than three ties being provided per marker.

**Method of Measurement**

- (e) Measurement shall be taken **per linear foot for the entire four (4) duct conduit system complete-in-place** in accordance with the payment limit lines shown on the plan.

**Basis of Payment**

- (f) Under **Item 63** the Contractor will be paid the contract unit price **per linear foot for the entire four (4) duct conduit system complete-in-place**, inclusive of any required bends, which unit price shall include full compensation for all labor, materials, tools and equipment and all incidentals necessary to complete the work under this item in accordance with the plans, as directed by the Engineer and as specified herein, inclusive of the removal and disposal costs of the existing materials generated and displaced by these operations.
- (g) Permanent roadway patch and sidewalk patch, for the Maple Street ‘beyond the project limits’ location shall be paid for under **Item 39** and **Item 46** respectively.

**END OF SPECIAL PROVISIONS**

## **DRAWINGS**

**DRAWINGS MUST BE OBTAINED THROUGH THE PURCHASING DEPARTMENT, HOWEVER THE CONTRACTOR IS ADVISED TO CALL AHEAD TO ENSURE THAT A COMPLETE SET OF DRAWINGS IS READILY AVAILABLE. (617-796-1220)**